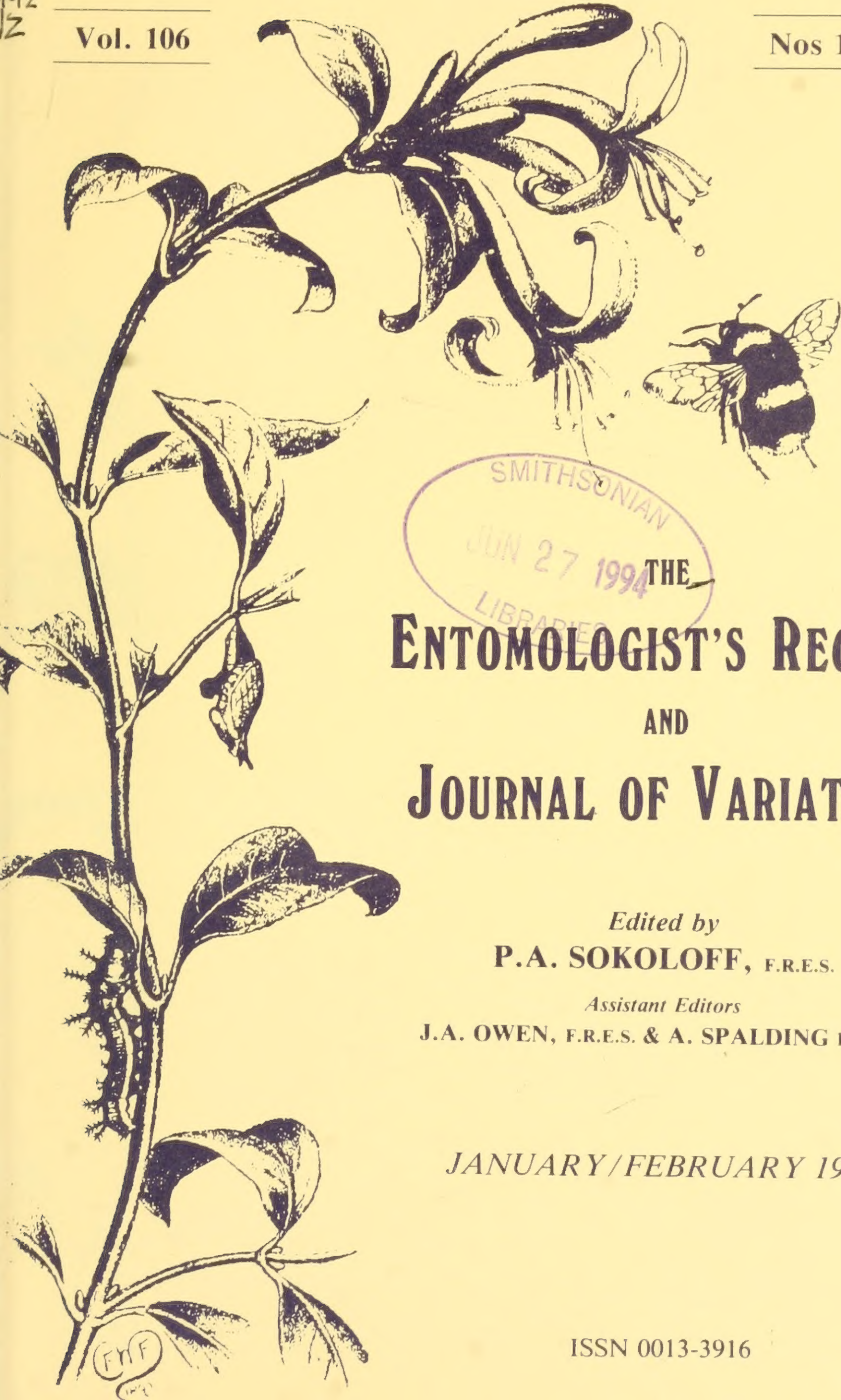
PUBLISHED BI-MONTHLY

Vol. 106

Nos 1—2



THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

Edited by

P.A. SOKOLOFF, F.R.E.S.

Assistant Editors

J.A. OWEN, F.R.E.S. & A. SPALDING F.R.E.S.

JANUARY/FEBRUARY 1994

ISSN 0013-3916

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

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EDITOR: All material for publication and books for review.
REGISTRAR: Subscription changes of address and non-arrival of the Journal.
HON. TREASURER: Advertisements and subscribers' notices.

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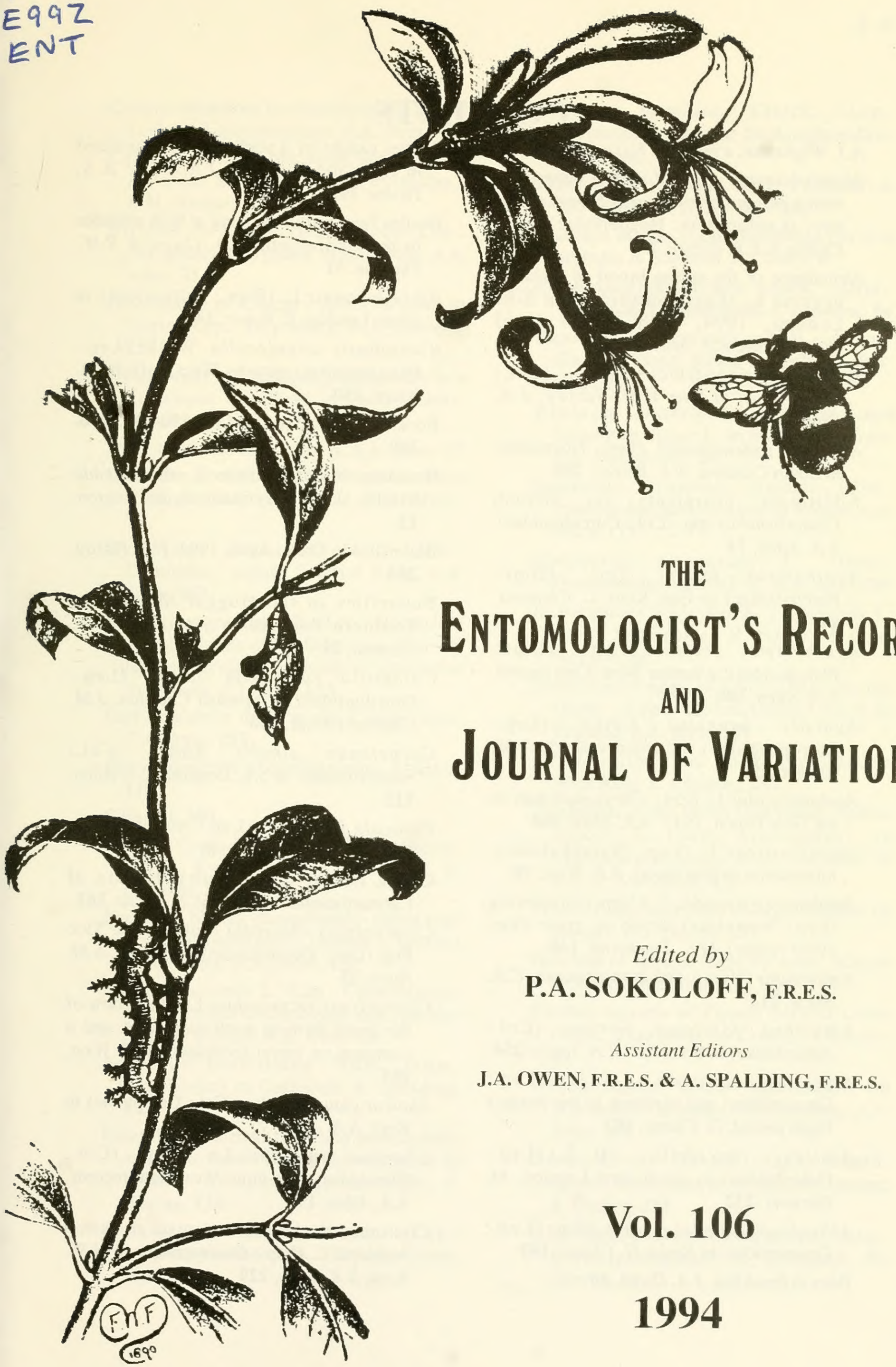

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CONTRIBUTORS

Printed in England by
Cravitz Printing Company Ltd.
1 Tower Hill, Brentwood, Essex CM14 4TA.
Tel: 01277-224610

THE *ABANTIS BISMARCKI*—GROUP OF SKIPPER BUTTERFLIES, WITH THE DESCRIPTION OF *ABANTIS BAMPTONI* sp. nov. *(LEPIDOPTERA: HESPERIIDAE)*

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INTRODUCTION

THE GENUS *Abantis* Hopffer, 1855 is composed of a number of very rare species, many of which are not represented even in large museum collections, and most of which are present only in very small numbers.

Abantis bismarcki Karsch, 1892 was described from near Bismarcksburg on the Togo/Ghana border and is found from Ghana to southern Sudan and western Kenya (Larsen 1991), where it is rare throughout. During 35 years of collecting in the Volta Region of Ghana, Father Theodor Maessen (pers. comm.) collected only about a dozen, virtually all hilltopping on the same hill. The Natural History Museum, London, has only seven or eight and the National Museums of Kenya only seven. There are confirmed records from Ghana, Togo, northern Nigeria, the drier parts of Uganda, southern Sudan and western Kenya.

Abantis arctomarginata Lathy, 1904 was described as a species from Zomba, Mlanje in Malawi, but was downgraded to a subspecies of *A. bismarcki* by Aurivillius (in Seitz 1925). Evans (1937) reinstated it as a distinct species, based on differences in the male genitalia. It differs more decisively from *A. bismarcki* in having a distinctly rounded hindwing, the tornus not being produced at all. The narrower black marginal band is of even width, not broadening towards the tornus. Males look rather like females of the other species. In *A. bismarcki* the tornus is distinctly drawn out, as in most other members of the genus. The rest of the hindwing is snow-white without orange shading along the anal fold as in *A. bismarcki*. On the forewing the white hyaline spots in spaces 1b, 2, and 3 are at least twice as long as in *A. bismarcki*. We have verified that the holotype is of the round winged form.

The distribution of *A. arctomarginata* is generally considered to stretch from Zimbabwe to Shaba, Malawi, and much of southern and central Tanzania. We have, however, seen specimens of true *A. arctomarginata* only from Malawi and south-central Tanzania (Iringa). It is, again, a very scarce species. There are less than ten in The Natural History Museum, London, all from Malawi, and none in the National Museums of Kenya. Kielland (1990) never found it in Tanzania.

It has largely been overlooked that other populations in southern Africa are quite different from the true *A. arctomarginata*, in fact being in several respects closer to *A. bismarcki*. This form was actually figured by Neave (1910) as the putative female of what is now known as *A. lucretia lofu*

Fig. 1. Top left: *A. bismarcki* male from Kimaeti, western Kenya, v.1993 (S.C. Collins leg.). Top right: *A. arctomarginata,* male from Madibira Rd., Iringa, south-central Tanzania, ii.1992 (T.C.E. Congdon leg.). Bottom: bred male of *A. bamptoni* from Harare, Zimbabwe, iii.1991 (J.I.W. Mullin).

Neave, 1910; this obvious error was spotted by Aurivillius (in Seitz 1925), who described it as *A. bismarcki arctomarginata* f. *neavei* (type locality: near Lake Benguela, Zambia). Aurivillius clearly intended it to be an infrasubspecific name and it does not seem subsequently to have been made available under the International Code for Zoological Nomenclature.

Evans (1937) said nothing specific about the status of f. *neavei,* simply listing it as a synonym of *A. arctomarginata,* but he must later have reconsidered the matter, since the arrangement of his synoptic collection at The Natural History Museum includes three subspecies, ssp. *bismarcki,* ssp. *arctomarginata,* and ssp. *neavei.* However, this was never published. Carcasson *et al.* (in press) treat it as infrasubspecific.

Thus, there are three clearly distinct taxa in the *A. bismarcki*-group, that of Zimbabwe, Zambia, and Shaba being without a valid name. The question is whether or not to treat them as three subspecies of *A. bismarcki* as implied by Evans. We believe the radically different shape of the hindwing of *A. arctomarginata* places it apart from the two others, yet the genitalia — which are not strongly differentiated — place *A. arctomarginata* closer to the other southern species than to *A. bismarcki,* though their wing-shapes are so different. The best solution appears to treat them as three distinct species.

Abantis bamptoni sp. nov.

Male: The russet basal spot of the forewing is larger than in *A. bismarcki* and the white hyaline spots in spaces 1b, 2, and 3 are longer, though not quite as long as in *A. arctomarginata.* In *A. bismarcki* the spot in space 2 is subequal to the cell spot; in *A. bamptoni* the spot is twice as long. The hindwing is not rounded as in *A. arctomarginata,* having the general shape of *A. bismarcki,* but the black margin is not as broad. The edge of the anal fold is usually tinged with orange and the hindwing ground-colour is not as pure white as in *A. arctomarginata.* On the hindwing underside the costa tends to be shaded orange rather than black, though this may be subject to seasonal variation.

Female: Almost identical with the male, but larger. Since females always have more rounded hindwings, the distinction in relation to *A. arctomarginata* is rather less obvious than in the male, but the black hindwing margin remains broader, widening towards the tornus.

Male genitalia: The male genitalia of all three species are very similar, as is the case in other species-groups of the genus, such as *A. nigeriana/pseudonigeriana* and *A. elegantula/maesseni.* They are strongly asymmetrical, since the massive gnathos consists only of the right branch. Despite the superficial resemblance to *A. bismarcki,* the genitalia of *A. bamptoni* are closest to those of *A. arctomarginata,* from which males can be distinguished at a glance because of the rounded hindwing shape. However, the main genitalia difference is rather minor (fig. 2).

HOLOTYPE: We select as holotype the male from Solwezi, N. Zambia, placed as "ssp. *neavei*" in the synoptic collection arranged by W.H. Evans (The Natural History Museum, London).

The species is named in honour Ivan Bampton who has done much research into the early stages of African butterflies over the past 25 years. Given that f. *neavei* has not been in use, and since it was based first on an error by Neave, and then on an incorrect assignment of status by Aurivillius, we have not wished to maintain this name.

Discussion

We have seen specimens of *A. bamptoni* from many localities in Zimbabwe (Bomponi, Vumba, Harare), from the Lake Tanganyika area in Tanzania (Kielland 1990), the Shaba area of Zaire (Mpala), Zambia (Solwezi, Mt. Swebi), and from Mozambique near the Zimbabwe border. The known range thus covers a crescent to the south and west of that of *A. arctomarginata.* Both are strongly disjunct from *A. bismarcki.*

Material of genuine *A. arctomarginata* from Malawi and south/central Tanzania has always been very limited and most published illustrations represent *A. bamptoni.* Thus the series in Pennington (1978) are clearly all *A. bamptoni,* as is the female figured by Kielland (1990). The radically different hindwing shape of the male never leaves the slightest doubt as to which species is involved.

Fig. 2. The male valve of *A. bismarcki* is shown. *A. bamptoni* differs in the shape of the main dorsal process, shown above that of *A. bismarcki*. The valve of *A. bamptoni* does not differ materially from that of *A. arctomarginata*. Overall, the differences in genitalia are rather minor.

A. bismarcki has not been bred; the two other species have both been bred on *Uapaca* (Euphorbiaceae). Both C. Congdon and I. Bampton bred *A. arctomarginata* in southern Tanzania, and J.I.W. Mullin and R. Pare bred *A. bamptoni* on *Uapaca kirkiana* near Harare, after being shown the larval pads by I. Bampton. The eggs are laid singly on the top of the leaf and are covered with the anal hairs of the female, to the extent that the egg cannot be seen. This type of anal hair in the female has evolved independently also in some Lycaenidae (*Satyrium*, *Pseudaletis*, and *Cupidesthes*).

A. bamptoni is very rarely met with, usually on flowers, and does not seem to engage in hilltopping. *A. arctomarginata* does engage in hilltopping and is more frequently seen in any given locality (I. Bampton, pers. comm.).

Acknowledgements

This is the second in a series of papers under the auspices of the project *Butterflies of West Africa — origins, natural history, diversity, and conservation (1993-1997)*. Larsen is grateful to the Carlsberg Foundation of Denmark for their support to the West African field activities. We also thank The Natural History Museum, London and the National Museums of Kenya for their kind co-operation, mediated by Philip Ackery, Campbell Smith and Richard Bagine. British Airways Environment Department kindly donated a ticket for Larsen to visit Nairobi.

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White-letter Hairstreak caterpillars in Southwest Norfolk, 1993

Dutch elm disease has remained still very active in Norfolk and Suffolk since the first wave of the disease, and few large trees survive; but along a good many roads, motorways and small lanes there is vigorous elm regrowth commonly to twenty-five feet high and this is comprised largely of *Ulmus procera* the English elm with some East Anglian *U. nitens* and *U. carpinifolia.* There is also a good deal of elm in pockets scattered through the Scots pine plantations of Thetford Forest, growing as sprawling understorey beneath the enfeebled pines and other trees that have gained foothold; much of this elm is *Ulmus glabra,* the Wych elm, and unlike the other elms it flowers early in life so that much of Thetford Forest understorey elm is of an age now bearing flowers.

An enlightened member of the forest staff when planning clearfalls of the pine some years ago took care to keep out of the felling plan those areas with attractive broadleaved underwood so that they were not cleared and replanted with pine. It was one of these Wych elm sites that attracted my attention in mid-May of this year when pondering on the current state of *Satyrium w-album* Knoch. hereabouts. So I beat the elm heavy in seed and in the course of some two hours counted forty-seven *w-album* larvae in from second to last instar and (as with larvae of Green Hairstreak last year) found the labour of returning larvae to their food so time-consuming that I then ceased beating elm, which was yielding a useful number of *Brachionycha sphinx* Hufn. Some days later I was in another part of the forest about six miles distant where there was a scatter of Wych elm so I tried my hand again and knocked out four larvae at the first strike. Then seeking larvae of *Cosmia affinis* L. I went to a hedge of English elm, for *affinis* is not easy to find on other elms, which stood so hard by the verge of

a very narrow lane that the foliage grew as a tight wall into which the beating tray had to be hard thrust. I found my *affinis* but also a solitary *w-album* which I saw came from scrub Wych elm abutting from the adjacent copse. One final discovery was made before the hairstreaks pupated. Along the busy A1075 road there was a patch of Wych elm rich with seed that grew so close to the highway that passing traffic clipped its foliage, and this I thought might be the ultimate test for *w-album*; it was rather hazardous to attempt to beat the branches from the road and because there was no other access I simply cut off four branches with much seed about four feet long, and took them back to my car where I shook out three *w-album* larvae.

Twenty larvae I retained fed up quickly and in the last instar fed ravenously on leaves alone. There was one parasitoid, in contrast to *Quercusia quercus* L. of which I retained a couple of dozen whilst beating for oak feeding noctuids, and of which exactly half the *quercus* were parasitised by *Phryxe magnicornis* (Zett.), the sole *w-album* fly being *Phryxe nemea* (Meigen), both being identified by Tom Ford, via Dr Mark Shaw.— G.M. HAGGETT, Meadows End, Northacre, Caston, Norfolk.

Eudonia alpina Curtis (Lep.: Pyralidae) at low altitude in Scotland

Whilst visiting Scotland in late May 1993, myself and K. Redshaw secured three examples of the Scopariine, *Eudonia alpina*, at Coylumbridge, near Aviemore, Inverness-shire. All three specimens were taken in the vicinity of the campsite where we were staying (NH 916105), a site surrounded by the Caledonian forest habitat so typical of this area, and at an altitude of approximately 250 metres above sea level.

The first specimen, a male, was taken at actinic light on 28th May, and two more males occurred on the night of 30th May, one at actinic light and one at the artificial campsite lights. Mercury-vapour traps were operated close to this site on two nights during this period and the area was searched by day, but no additional *alpina* were recorded.

Although this species occurs at lower elevations in Shetland, in mainland Scotland it is only known to occur on high mountains above 700 metres (Goater 1986 *British Pyralid moths*; Parsons 1993 *A review of the scarce and threatened Pyralid moths of Great Britain*), and is here associated with bare, open ground above the treeline. These three examples therefore not only constitute the first mainland records of this species at such a low elevation, but also represent the first time the species has been associated with the Caledonian forest habitat.

The date of these specimens is approximately two weeks before the species starts to appear in its montane haunts (B. Skinner pers. comm.), and this suggests that these three examples bred at a low altitude rather than being wind-blown individuals originating from higher ground.— SEAN CLANCY, "Delhi" Cottage, Dungeness, Kent TN29 9NE.

MERDIGERY[1] AND MATERNAL CARE IN A LEAF BEETLE

RICHARD A. JONES

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ON 23rd JUNE 1992, while photographing insects around the Powdermill Reservoir, near Brede, East Sussex, I came across a female *Galerucella calmariensis* (Linnaeus) (Col.: Chrysomelidae) ovipositing on an alder leaf. She had laid about 20 eggs in a loose group on the underside, around the mid-rib, near the edge of the leaf. I turned over the leaf and took a few photographs of her.

As is usual when photographing beetles, the electronic flash-guns of the first "shot" alarmed the creature, which squatted down, holding tight to the leaf (Fig. 1). For the second shot a few moments later, the beetle was in exactly the same pose, as if startled into immobility. But within about 15 seconds, the time required for the flashes to recharge for a third shot, the beetle had recovered her composure and turned round to adopt what appeared to be a protective position over her eggs. Here she remained, actively turning about, her antennae held erect and probing in the air when I took a third photograph (Fig. 2). Shortly after this, I knocked the leaf and she fell off into the surrounding herbage, but was subsequently captured. Whether her actions could be considered to constitute maternal care remains to be seen, although it might be argued that she showed some aspects of this behaviour.

Many recent books do not convey the rather loose foodplant associations of *Galerucella* species. Walsh and Dibb (1954) suggest *G. tenella* (Linnaeus) specifically associated with alder; Cooter *et al.* (1991) and Bullock (1992) list various other foodplants for seven species of *Galerucella*, but alder is not included. Rather practically, Joy (1932) states "Generally on willows, etc". Only Fowler (1890) acknowledges alder more widely, giving it as a foodplant, albeit secondarily, of *G. lineola* (Fabricius), *G. tenella*, and the present species, *G. calmariensis*.

Close examination of the slides resulting from the photographic session revealed something which was not apparent at the time: each egg was topped with a dark sausage-shaped blob (Fig. 1). Knowledge of the egg-laying behaviour of other chrysomelids suggested that these might be morsels of frass, deposited on the eggs when they were laid. Each egg clearly shows this deposit attached to its top end and directed away from the egg-laying female. Several other chysomelids exhibit various forms of merdigerous behaviour.

Tortoise beetle larvae (subfamily Cassidinae) are armed with a special bifurcate process which retains the shed larval skins in the form of a knobbly mass held over the creature's back. This is further ornamented with excrement. If disturbed the larva waves the "parasol" over its back, presumably in an attempt to revolt its would-be attacker into retreat.

[1] See appendix on page 11 for a discussion of the etymology of this word.

Fig.1. *Galerucella calmariensis* egg-laying on an alder leaf, Brede, East Sussex, 23rd June 1992. Each egg is clearly topped with what appears to be a frass dropping. (Photo: R.A. Jones)

Fig. 2. Disturbed by the flash-guns, the *Galerucella* turned and climbed on top of the eggs. (Photo: R.A. Jones)

Larvae of the lily beetle, *Lilioceris lilii* (Scopoli), immerse themselves with their copious liquid frass. The anal opening is sited on the upper surface of the larva, enabling the creatures to daub themselves with their own excrement. The adult beetles' bright red colour is, one surmises, a warning of their distastefulness. The red larvae, covered in their reddish droppings, are therefore probably doubly distasteful. *L. lilii* has, in the past, also been described under the name *L. merdigera* (Linnaeus).

The female of *Cryptocephalus coryli* (Linnaeus) manipulates a pellet of frass with her hind tarsi, coating each newly laid egg with a shell of faecal material. When the larva hatches, it remains inside this frass shell, adding to it and increasing its size as the larva increases in bulk (D. Porter and I. Menzies, pers. comm.). Other species in the genus have long been known to have case-bearing larvae, and that the cases are made of frass (Géné, quoted by Westwood, 1839).

In all of these instances the use of excrement is hypothesized to give protection to the egg and resulting larva. In the case of *Galerucella calmariensis* reported above, the amount of frass on each egg is small, not nearly enough to hide the eggs or even disguise them. Perhaps, though, it is sufficient to cover any scent from the eggs which might attract a potential predator or parasitoid.

Acknowledgements

My thanks to Mr. D. Porter and Dr. I. Menzies for the details of the egg-laying and larval behaviour of *Cryptocephalus coryli* and to Mr. A.A. Allen who kindly identified the beetle and added material to an initial draft of the appendix.

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Appendix

Merdigery, merdigerous and other dropping-related etymologies

I make no apology for the word "merdigerous" which was used by Westwood (1839, vol. 1, p. 379) in discussing the behaviour of tortoise beetle larvae. I do, however, have some slight reservations on the validity of "merdigery", although analogous nouns, transformed from technical adjectives, include carnivory, from carnivorous, and oligomery, from oligomerous. And anyway, it does make for an intriguing title to this article!

During Westwood's time, the lily beetle was known by the name *Lilioceris merdigera* (Linnaeus), from the Latin *merda,* dung and *gero,* I carry. And even though rare in Britain at the time, the beetle was well known because of its curious defecation habits. As an anglicised form, the word "merdigerous" would not have seemed unusual.

Some other beetles are named from *merda,* because they live in dung, though not their own. These include *Aphodius merdarius* (Fabricius) and *Hister merdarius* Hoffman, J., as well as a few other insects, such as the moth *Tinea merdella* Zeller, and the fly *Scathophaga merdaria* (Fabricius).

The last mentioned insect is now known by the name *Scathophaga stercoraria* (Linnaeus), a name that reflects another Latin word for dung, *stercus.* This word crops up in the names of several insects associated with dung, including two dor-beetles, *Geotrupes stercorarius* (Linnaeus) and *G. stercorosus* (Scriba).

The distinction between *merda* and *stercus* is a fine one. *Dr. Smith's smaller English-Latin dictionary* (1871) suggests that whereas *stercus* can be used to signify the dung of all kinds of animals, *merda* is more appropriate for the dung of birds or smaller animals. This seems to have been duly followed by those naming insects, and is particularly apt for *Lilioceris.*

The shorter *Oxford English dictionary (OED)* includes the word "merd" as an obsolete term for dung and excrement, but it is not given the improper connotation that the word "merde"enjoys in French. Webster's (American) dictionary includes "merde" with the proviso that it is sometimes considered vulgar. The *Glossary of entomology* (1950, J.R. de la Torre-Bueno) includes "merdivorous", meaning dung-eating, as do various other non-technical American dictionaries of the 19th and 20th centuries.

Reflecting the importance of the dung of larger, rather than smaller, animals, the *OED* does contain several sterco-words, from stercobilin, the colouring found in faecal material, to stercorous, meaning excrementitious.

The other major root for excrement-associated words in the English language is the Greek for dung, κόπρος (kopros). This gives us coprolite (fossilised dinosaur droppings), coprophilous (dung-loving), coprostasis (constipation) and the like.

The scientific names of insects, as indeed for all organisms, animals and plants, are often based on Greek words to provide the generic name, hence the

scarab *Copris*, the staphylinid *Coprophilus*, the fly *Copromyza* and the ink cap fungus *Coprinus*.

Another Greek word for dung, ὄνθος (onthos), appears regularly in such beetle names as *Onthophilus* the "dung-loving" histerid, *Philonthus* the staphylinid "lover of dung" and *Onthophagus* the "dung-eating" scarabeid. A third is σκῶρ (skōr, stem skăt), especially favoured by dipterists, as in *Scathophaga* (a misspelling), *Scatina* and *Scatopse*.

To end, there is the Latin *căco*, the act of defecation. In its Greek form κακκάω (kakkaō) and κάκκη (kakkē), dung, it has found its way into entomology; thus we have *Hypoccacus* "under dung", a genus of histerid beetles, and *Caccobius*, a Continental genus of scarabaeids.

This last dung root does not appear to have found its way into much general English usage although the *OED* does give "caccagogue", an ointment made from alum and honey used to promote stool. The French use a rather shorter derivative as a vulgar oath. A form of this is also occasionally used in English; probably best known in the term cack-handed suggesting a rather coarser origin than its polite definition of "left-handed" or "ham-fisted".

The Speckled Wood, *Pararge aegeria* L. (Lep.: Satyridae) an important character in *Doctor Zhivago*

It has often been pointed out that the upperside of the Speckled Wood butterfly is perfectly coloured for moving and basking in dappled sunlight. I was startled, however, to discover whilst walking this summer in Thetford Forest (Norfolk) just how effective its greyer, underside camouflage is as well.

A group of about ten butterflies were flitting about in the shade of a pine wood and periodically — literally as if by magic — disappearing before one's eyes. A closer look revealed that every so often they were settling not on the pine-needle floor, but on the *bark* of the pine-trees, where with their wings closed and their forewings retracted they were practically invisible. After a short rest, they would fly off again, only to repeat the trick shortly afterwards.

The incident rang a bell. Eventually I remembered that in Boris Pasternak's novel *Doctor Zhivago* (Chapter 11) the doctor observes a "brown speckled butterfly" flying through dappled sunlight and then settling "on the bark of a pine tree" and "disappearing into it". Textual evidence and my own observation suggest this butterfly was *Pararge aegeria (tircis)*, which is the only Speckled Wood species distributed through northern Russia as far west as Siberia (where this chapter of the novel is set). The butterfly saves the doctor's life by giving him the idea that if he lies absolutely still on the forest floor he will blend into it and not be noticed by a group of murderous partisans nearby!— P. MILES, 29 Highfield Avenue, Cambridge CB4 2AJ.

BREEDING *MANIOLA JURTINA* L. AB. *ADDENDA* MOSLEY (LEP.: SATYRIDAE)

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SPECIMENS OF *M. jurtina* having extra spotting on either surface of the forewings, positioned in the submarginal band below the apical spot, are known as ab. *addenda*. In its lesser expressions (one or two small extra spots on each forewing, usually on the underside) it is not a rare form in the female, although in England it is rare in the male (I have found it less rarely in Western Ireland). More extreme developments with two heavy extra spots on the upperside as well as the underside of each forewing are distinctly uncommon. The most extreme form has white pupils in the extra spots. This is rare. The name *postexcessa* Leeds covers extra spotting on either surface of the hindwings. Brakefield and Noordwijk (1985) have shown that spotting on the underside of the hindwings is controlled by a number of genes (its inheritance is multifactorial with no segregation into clear-cut forms). They do not mention extra spotting on the upperside of the hindwings.

On the 6th July 1991 a female showing two strong extra spots on the underside of each forewing (the lower spot developing a pupil) with traces of these on the upperside, was captured in a hay meadow in North Dorset. Approximately 120 ova were laid, resulting in 31 adults the following June. The brood contained 17 males (seven showing extra forewing spotting, mostly minor forms) and 14 females (three with extra forewing spotting). The best male is illustrated (fig. 2). Two of the female aberrations were minor, but one was a little more developed than the parent, having good upperside extra spotting and also showing a spot at the anal angle of the upperside of the hindwings. This paired with a male showing one extra spot on each forewing, on both surfaces. Two hundred ova were laid.

Survival was poor and the F2 brood contained only 19 individuals. Of the nine males, seven were aberrations, several being good *addenda* (fig. 1). One, which emerged badly deformed, was an extreme example of *excessa* having two large pupilled extra spots on the upperside of each forewing, and at the anal angle of the hindwing upperside. Nine of the ten females were aberrations including two extreme forms (figs. 3, 4 and 6). Three of the females showed an extra spot on the hindwings (figs. 3, 5 and 6), one specimen having two spots on each hindwing (fig.6).

The results indicate multifactorial inheritance of ab. *addenda*. The upperside hindwing extra spot appears to be connected to *addenda* as part of the multifactorial complex (in this experiment it only occurred on strongly developed *addenda* although in the field it may occur independently). A few of the best *addenda* specimens also showed extra spotting on the underside of the hindwings. This suggests that all the extra

Aberrations of *Maniola jurtina* L. All specimens figured coll. RDGB.

Fig. 1 Male upperside, ab. *addenda*. F2.

Fig. 2 Male underside, ab. *excessa*. F1.

Fig. 3 Female upperside, ab. *excessa*. F2.

Fig. 4 Female underside, ab. *excessa*. F2.

Fig. 5 Female upperside, ab. *excessa*. F2.

Fig. 6 Female upperside, ab. *excessa*. F2.

spotted forms may be associated in a multifactorial complex. The fact that each form may occur independently of the others in the field indicates that each may be better adapted to slightly different environmental conditions.

Reference

Brakefield, P.M. and Noordwijk, A.J. van., 1985. The genetics of spot pattern characters in the meadow brown butterfly *Maniola jurtina* (Lepidoptera: Satyrinae) *Heredity* **54**: 275-284.

Hazards of moth collecting: diseases in Ecuador

Ecuador is probably the richest country in the world for biological diversity. It occupies only 0.2% of the earth's land surface, but contains an estimated 10% of all the plant species. It is certainly a superb place for moths. I have made several trips there, usually as part of a team surveying newly established nature reserves, looking at the moths of primary forest areas of the Andes. The worst hazard until my trip in 1992 was eating in the local restaurants. The locals seem to prefer fast food joints, such as Pizza Hut and MacDonalds (particularly for a family outing on Sundays), although I have found most of the cafés in Quito old town very good value for money. Prior to 1992, I had been ill twice, both times following a meal at the same Chinese restaurant in Cuenca (opposite the fire station in case you ever find yourself there). This is the only restaurant where I have found a real fly in my soup. Having guts-ache at 10,000 feet seems much worse than at sea-level, and both times I was incapacitated for nearly a week.

My trip in 1992 was different. I was visiting the new Los Cedros reserve, owned by the Centro de Investigacion de los Bosques Tropicales, a non-profit making foundation dedicated to the preservation of the tropical forests of Ecuador. The reserve lies between 1,000 and 2,000 metres above sea-level. Access is very difficult, requiring an eight hour hike from the nearest road up a narrow, steep path which winds through open farmed areas and forest, following one of the many river valleys. It is necessary to take all food and medicines with you, although near the end is a small house where Paulina and her daughters make you welcome with (if you are lucky) a cool bottle of beer or Coca-Cola. Just as you think you can't go on any further, a green painted house comes in sight, built by a settler now gone from the reserve. We would never have made it without the assistance of the reserve warden, José.

My basic plan was to sample the moths at different altitudes, using a lamp suspended in front of a white sheet hung between trees. The best sampling point was at the house itself, where we could sit on the verandah drinking the local "trago" distilled from cane sugar and wait for the moths to come to us. I was also intending to sample at other sites, so I ran the light

nearby a small river at 1,450 metres above sea-level, helped by two local students (Marcos and Sandra) and Steve who came with me from Britain. As I suspended the lamp on its rope between trees, I could smell the aroma of substances which are illegal in this country wafting up from a nearby half-completed house. I lit the lamp and several lovely moths came in, notably many beautiful Ctenuchids, imitating Hymenoptera as they flew around the lamp. There was also a single *Xenosoma* species, with white wings crossed by black veins, looking exactly like Pericopinae species and themselves mimicked by Dioptidae (or *vice-versa*). Along with the moths came several hundred tiny black insects, attracted by the light and swarming over us, biting exposed skin. Steve and Marcos retreated, leaving Sandra and I, buttoned-up against the sand-flies, to battle on in the hope of a big hawkmoth. Soon, it was too much for us and we left quickly, back to José's house, where a log fire burned, beans were on the boil, the BBC World Service was on the radio and trago was in the glasses ready for drinking. But the best use of trago was splashing on our bites, cooling them as the alcohol evaporated. After more trago, we had a party on the new plank floor that was to form an extension to José's open plan house, until the planks came loose and the extension started to collapse.

Back in Quito a few weeks later, the bites had turned into spots, which came and went on exposed parts of the body. Everybody I met had a tale to tell about some illness that they had picked up somewhere, in the Orient jungle, food-poisoning at a Chinese restaurant in Cuenca, strange diseases from the Quito street girls (3,000 sucres a time, or so I'm told, equivalent to £1.00). Still, I was okay, only sand-fly bites, and Sandra too was fine. It was only back home that I started to worry, as the spots grew bigger and my GP told me not to worry. Trevor, a friend who has studied sand-flies and their vectors at college, told me that I probably had contracted leishmaniasis, a widespread tropical disease with several different types. He warned me that one strain prevalent in India led to enlargement of the testicles, and suggested that I could borrow his Cornish kilt when "things got out of hand". The skin specialist at the hospital confirmed that the disease was *Leishmaniasis braziliensis,* potentially dangerous if not treated. The worst part of the treatment was that I had to lay off drink for a month, including Christmas and New Year, which gave me my first alcohol-free Christmas since 1951. Still, I am cured now. It is said that the locals deal with the illness by deliberately exposing their children to sand-fly bites on parts of their bodies that are normally concealed by clothes, thus giving them some limited immunity. Any scars thus produced will not normally be seen.

If a tale has to have a moral, then it is this: its better to have mothed and leishmaniasis, than never to have mothed at all! The Ctenuchidae alone were worth the trouble. However, if you see someone at the AES Exhibition wearing a kilt, it could be me, so don't take a peak below the tartan.— ADRIAN SPALDING, Tregarne, Cusgarne, Truro, Cornwall.

DUNG-BEETLES IN SOUTH-EAST LONDON

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THE INSECTS which are the subject of these notes are those to which the term dung-beetle is commonly applied, in this case one genus of Scarabaeidae (*Aphodius,* here including *Colobopterus*) and two of Geotrupidae (*Geotrupes* and *Typhaeus*). The genus *Onthophagus* in the former family is unrepresented locally. The district concerned is bounded by the parishes of Greenwich, Blackheath, Kidbrooke and Woolwich, forming a compact area. Supplies of herbivore dung naturally tend to be very scanty and irregular in such a suburban area, resulting in a poor dung-beetle fauna compared with that of country districts with abundant and continuous pasturage. However, from time to time, small enclaves can be found even in the suburbs which enable one to gain an idea of the species locally present. I paid some attention to two such sites in my district from the autumn of 1978 to that of 1980, obtaining results which were no means devoid of interest.

One of these was the deer-enclosure ("The Wilderness") in Greenwich Park (denoted hereunder by G), a lightly-wooded area in which deer have been kept for many years; there were also, besides the deer dung, varying amounts of horse dung (though horses were not normally kept there — they might not have mixed well with the deer!). The other (denoted by K) was an open grass field at Kidbrooke, with a few horses, ponies, or donkeys; it was later obliterated by a new bypass. Different as were the two sites in many ways, the dung-beetle fauna was remarkably similar, only three species not being found at both.

In the ensuing list, when the type of dung is not specified it is understood to be equine (horse or donkey), this producing the vast majority of the beetles, and no species was confined to the deer dung. The most productive day, 15.v.79, was the hottest (up to 81°F), yielding seven species of *Aphodius* at the Kidbrooke site.

Aphodius (Colobopterus) erraticus (L.). Scarce: K,4 (15.v.79); G,1 (22.viii.79). Like the next, not found in 1980.

A.(C.) fossor (L.). Also scarce: K,1 (15.v.79); G,2 (17.vi.79).

A.(C.) haemorrhoidalis (L.). K, rather common (15.v.79); 2 (2.ix.79), not seen there in 1980; G,1 (3.viii.80). Woolwich Common, 1 (19.v.90).

A. fimetarius (L.). Fairly common but erratic, often singly; K, common and often in pairs, 7.iv.80, fewer on other dates; sporadic in G. Sometimes active very early in the year, as in grass traps in February in my former garden at Blackheath.

A. foetens (F.). Scarce: K,2 (2.ix.79); G,1 (27.vii.80).

A. foetidus (Hbst.) (=*scybalarius* auct.nec F.). Only in my Blackheath

garden, at intervals singly or sparingly in rotting herbage, mainly grass heaps (Allen, 1951).

A. ater (Deg.). K,2 (15.v.79); no other finds of this generally common species at either site, but it used to occur as casual strays in the Blackheath garden.

A. pusillus (Hbst.). Equally rare: K,1 (15.v.79); 1, Woolwich Common (19.v.90).

A. granarius (L.). K,1 (1.viii.80); G (13.v.79) 3 horse, 1 deer, (2.vi.79) 1 deer. In the 1950s, in my Blackheath garden, it used to occur in rotting herbage and under a stone in a muddy place.

A. rufus (Moll). Rather frequent at both sites, especially G, and several times in deer dung; vii-ix. The first seen by me in this district flew to m.v. light at Charlton, 21.viii.78.

A. consputus Creutz. Of this very local and mostly rare species, one occurred in horse dung on Woolwich Common, 13.x.91 (Allen, 1992).

A. sphacelatus (Panz.). Generally common from early to late in the year, though always heavily outnumbered in late autumn by the next; not common, however, at the two sites G and K when they were worked, and noted on only a few dates as at G (13.v.79, 2 horse, 1 deer). This scarcity in such an otherwise abundant species is curious.

A. contaminatus (Hbst.). Throughout the district, but (as everywhere) only in autumn; first appearing in early September as a rule, rising to vast numbers in October and dwindling gradually to nothing through November. When present in colossal abundance it usually excludes any other species (as at K, 7.x.78). Its apparent absence at G on 28.ix.80 is inexplicable. It does not object to dog dung, like the last species; nor to that of deer, burrowing into and hollowing out the pellets.

A. rufipes (L.). Very scarce at the two sites and found only in G (27.vii.80, 3.viii.80), the second in stale rather mouldy dung. Doubtless quite general, and considered common, but I find it to occur singly as a rule, and usually in rather old horse dung with no other adult Aphodii. This is the species which most often flies to light.

Geotrupes spiniger (Marsh.). K,2 in separate deposits (7.x.78); G,1 (21.x.79). As there were plenty of burrows in evidence on the latter occasion, some of them may have belonged to this species. (In general our commonest *Geotrupes*.)

Typhaeus typhoeus (L.). G, burrows plentiful under and beside both horse and deer dung but only from about mid-October to mid-May; the beetles in varying numbers during the same period, seldom wandering at large. I never saw one in flight, which may be crepuscular. Even as late as 23.ix.79 no trace of the insect or its burrows was to be seen, while on 14.x the latter were already numerous and some of the beetles active. On 13.v there were many fresh burrows and casts (these indicating recent activity) alongside deer droppings, but no beetles seen; in 1980 the autumnal

burrows were first seen on 28.ix, and on 9.iii.80 were noted as being everywhere. On 18.xi.79 the beetles were an inch or two down in their burrows. (In Richmond Park I have known them to be out and about in plenty in a mild spell in February.) The larger piles of horse dung were often, in season, found to harbour several specimens, mostly small females.

The persistence of this striking insect ("the Minotaur") so near the metropolis is gratifying, and provided that the dung supply is maintained, it would appear to be under no threat there. It was, I believe, first found in the Wilderness (now a bird and deer sanctuary) by J.F. Burton some decades before, mostly as copious remains in Tawny Owl pellets, but was recorded from Greenwich as early as 1908 (Fowler, 1908).

The sixteen species listed above probably do not include all the scarabaeoid dung-beetles that inhabit the district. It is quite likely, for instance, that *Aphodius prodromus* (Brahm) — a fairly common species — could be found. In earlier times, a number of other dung-beetle species, from *Copris lunaris* (L.) downwards, were known fom the area, but few of them are likely to have survived there. The presence even of *Geotrupes stercorarius* (L.) is doubtful and requires confirmation.

Acknowledgements

I am indebted to Mr J.A. Murray, Superintendent of Greenwich Park, for his kindness in arranging a permit with the Department of the Environment; and to Mr John F. Burton for encouragement towards this end.

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A migrant *Ephestia*? (Lep.: Pyralidae)

On the night of 9th October 1991, I took an example of the pyralid, *Ephestia figulilella* Gregs. at m.v. light at Dungeness, Kent, during a period of migrant activity. I would be interested to learn of any other records of this species, normally associated with stored foodstuffs, "at large" in the British Isles, particularly coastal records away from suitable breeding sites. I am indebted to Bernard Skinner and Michael Chalmers-Hunt for confirmation of the specimen's identity.— SEAN CLANCY, "Delhi" Cottage, Dungeness, Kent TN29 9NE.

Bees at breakfast.

For the past two years, we have had bees at breakfast. They forage in the garden and then come down the chimney — but I had better start at the beginning.

One morning in March 1992, my wife and I were eating breakfast when we noticed a large black "bumble" bee crawling along the inside window sill. Thinking little of the episode, I took it outside and let it go. When other similar bees appeared on the window sill over the next few weeks, we got a bit more curious. I sent one to my good friend Mike Edwards who pronounced it a female *Anthophora plumipes* (Pallas). By the middle of May, we had performed about ten "rescues" and found another five or six bees as corpses. All were females and all were at the same window which is never open at that time of year. One day, we heard a bee buzzing and saw it emerge into the room from the chimney so we had, at last, found how they got into the room but not why.

In 1993, the invasion started earlier. The first bee, a male, appeared on the 5th February and, from then until 13th May, we recorded 42 "rescues", with up to five in the one day. Females outnumbered males 7:1. It took us to the middle of April to realise that our rescue statistics were being inflated. One day, we marked a bee with a small daub of Tipp-Ex before letting it go in the garden. Lo and behold, within a couple of hours, it was back down the chimney and sitting on the inside window sill waiting to be released. Not all of the ten or so we marked reappeared inside but about half did. One bee cycled three times. With our attention drawn to them, we often saw *Anthophora* in the garden. The white Tipp-Ex dots on marked specimens were quite visible as they flew about visiting flowers. They seemed particularly fond of *Pulmonaria*.

It seems, then, that we have bees at breakfast because they use our brick chimney stack as a nesting site. The chimney has an internal metal duct from the central heating boiler and the bees came down the chimney between its wall and the metal duct. Why some should lose their way and exit down the chimney instead of into the garden is anybody's guess. They probably emerge early in the season because they are warmed up by the effluent from the central heating boiler passing up the duct in the chimney. That they nest in the chimney is supported by the appearance on 30.iv.93, also on the window sill, of a specimen of *Melecta albifrons* (Forster), a cleptoparasite of the *Anthophora* and, on 2.v.93 of an example of *Osmia rufa* (Linnaeus) which has similar nesting habits to our breakfast visitors. *A. plumipes* is, of course, of more passing interest to a coleopterist for it acts as host to the rare beetle *Apalus muralis* (Forster) which develops in its nest, preying on its larvae. We await next spring with interest.

I thank Mike Edwards for identifying the bees in this story and telling me about them.— J.A. OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU.

BUTTERFLIES IN THE HOGGAR MOUNTAINS, SOUTHERN ALGERIA IN APRIL 1993

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THE SPECTACULAR Hoggar mountains in southern Algeria are not well known entomologically. The southern desert town of Tamanrasset, from which any foray into the Hoggar is made, sees fair numbers of tourists, most of whom fly down from Algier on organised package tours, spending only a couple of days.

Between 22nd April and 1st May 1993 I visited the Hoggar mountains, driving down to Tamanrasset from Ghardaia in a Ford Transit camping vehicle; a journey which was an adventure in itself. There is a sign in the town of In-Salah, just over half way from Ghardaia to Tamanrasset, warning that anyone venturing further south should have a 4-wheel drive vehicle, sand ladders and sand tyres as well as several days supply of water and food. A mere 20 kilometres further south, I had the opportunity to contemplate this message at my leisure, stuck fast in one of several large sand dunes blocking the road. I felt slightly better when, about half an hour later, a large open lorry carrying a mixed herd of goats and camels from Niger (officially the border is closed but with a little baksheesh . . . !), shuddered to a halt and joined me in the middle of the dune. The "patron" of the outfit invited me to join him in the shade under his truck whilst his team dug us both out, and instructed me in the art of not getting stuck again! The art is to examine the dune carefully first then approach as fast as possible, taking an absolutely straight line through the sand; turning the wheels even slightly results in an instant loss of speed and a predictable final result. Following his advice, there were no further difficulties and I even felt sufficient of an "old hand" on the return journey to offer advice to those less fortunate!

A 4-wheel drive vehicle is necessary to get into the Hoggar mountains; the piste is as bad as the scenery is spectacular, but well worth the time and expense if only to see the sun rise over the jagged peaks from the Ermitage du Pont de Foucauld at Assekrem. Collecting was limited; I stayed only six days in the Hoggar since my Algerian visa was valid for only 30 days and there were other things to do in the north of the country.

The diversity of butterflies was not great but some interesting species were seen; a combination of intense heat, soft sand, sharp rocks and large numbers of *Acacia* thorns littering the ground, made collecting difficult and pursuit foolhardy! Conditions were made considerably worse by the wind, which visited most afternoons and whipped up the sand, quickly bringing visibility down to almost zero; it was difficult to breathe and most uncomfortable to be caught in when any distance from shelter — another lesson learned the hard way!

Literature sources are provided at the end of this paper; anyone wanting further information on the area should consult the papers by Speidel & Hassler (1990 & 1991) who give a historical account of lepidopterological collecting activity in the area, together with an up-to-date species list and comprehensive compilation of literature sources.

In view of the dearth of literature and general lack of knowledge on the butterflies of the region, an annotated list of the species seen seems worthwhile.

PIERIDAE

Pontia glauconome Klug 1829

The commonest butterfly seen. Two butterflies believed to be this species were seen flying at the roadside north west of Tamanrasset on 24th April and several were seen during the following two days in a sandy arid area beyond the irrigated area east of the town. They are hardy butterflies, sheltering in (unidentified) low spiny bushes whenever the wind caused sand to drift. It was not uncommon in a dry wadi some 40 kilometres north east of Tamanrasset on route W141 in the direction of Assekrem, flying with the following species.

Colotis chrysonome Klug 1829

Only seen in a wadi approximately 40 kilometres north-east of Tamanrasset on 28th and 29th April. About 12 were seen but only three captured; they flew close to the ground and were difficult to follow visually against the yellow sand.

LYCAENIDAE

Virochala livia Klug 1834

Three females were seen in an arid area on the eastern outskirts of Tamanrasset on 27th April. Both sexes were found in small numbers on *acacia* bushes in dry wadis adjacent to the Source Chapuis approximately 12 kilometres east of Tamanrasset and further to the east. They were difficult to catch, flying at break-neck speed around the thorny bushes and then alighting suddenly on one of the yellow blooms to feed.

Lampides boeticus Linnaeus 1767

Common in cultivated areas close to Tamanrasset; several were observed flying in the town itself. A pair was also taken at the Source Chapuis on 28th April.

Tarucus (?) rosaceus Austaut 1885

A number of fresh males and one female were seen at the Source Chapuis on 28th and 29th April; a small number of males were seen also in a wadi to the east.

Both *rosaceus* and *Tarucus theophrastus* were noted in the Hoggar region by Speidel & Hassler (1990: 115). Despite several authors giving

external characters for the separation of the three *Tarucus* species in North Africa (*theophrastus*, *rosaceus* and *balkanicus*), positive identification can only be made genitalic examination. A review of the distribution of North African *Tarucus* is in preparation. The genitalia of the Hoggar specimens have not yet been examined and they are placed tentatively as *rosaceus*.

Azanus ubaldus Cramer 1782

A female was taken in a wadi near the Source Chapuis on 28th April and a second female was taken in the same place the following day. They were flying with *Virochola livia* around *acacia* bushes.

Zizeeria knysna Trimen 1862

Zizeeria karsandra Moore 1865

Common in the irrigated areas close to Tamanrasset town. Not seen elsewhere.

It is not certain whether these are *knysna* or *karsandra*, both of which are apparently recorded from southern Algeria; the genitalia have not been examined.

DANAIDAE

Danaus chrysippus Linnaeus 1758

Two specimens were seen flying slowly and apparently aimlessly in Tamanrasset town centre on 24th April, and another in the same place the following day. *Calotropis procera* (Asclepiadaceae), suggested as a possible hostplant, was very common all around the town but no other *chrysippus* were seen. *Procera* is a hostplant of *chrysippus* in West Africa (van der Heyden 1992).

SATYRIDAE

(?) Satyrid sp.

On 27th April, after walking beyond the cultivated area west of Tamanrasset and across an arid sandy area, I climbed a low rocky ridge — for the view rather than in search of butterflies. On the summit, two resting butterflies were disturbed and briefly observed as they dashed around the summit a few times and then flew down the slope. If I had been 2000 kilometres further north, I would have had no hesitation in identifying them as *Lasiommata* species; in the Hoggar where, to my knowledge, no Satyrid species has been noted, I prefer not to guess. I remained on the ridge for a further 15 minutes, during which time one might reasonably have expected *Lasiommata*, which regularly hilltop, to return. They did not. Their identity remains a mystery.

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Hazards of butterfly collecting — The Tampan Ticks of Gemsbok, Botswana, 1991

In February, 1991 we set off for a month to the furthest south-western corner of the Kalahari, the Gemsbok National Park. That is some thousand kilometres from our Gaborone base, much of it through the worst possible sand, where even our sturdy Toyota Hilux four-wheel drive could get stuck. Our aim was to see whether any of the special Cape and Karroo fauna could be found, in addition to the two beautiful "Coppers", *Tylopaedia sardonyx* and *Argyraspodes argyraspis*. We also saw vast numbers of *Catopsilia florella*; we did not know at the time that they were the parent brood for a subsequent migration containing at least 1.5 billion individuals (1992. *Tropical Lepidoptera*, **3**: 2-13).

The Kalahari is often referred to as a desert, but that is incorrect, since rainfall is usually much higher than the upper limit for true desert. In fact, most of the Kalahari is a well developed savannah, but it is true that during the dry season you may drive nearly a thousand kilometres without meeting any trace of surface water. However, the south-western corner of the Gemsbok National Park begins to approach true desert, with rainfall in places of less than 200mm a year.

Heading off into these parts basically means that you pack up for all eventualities — 150 litres of extra water, 250 litres of petrol, food for a full three weeks, and as many of life's little luxuries as can be crammed into the Toyota. If you have the space there is really no need to rough it more than necessary, especially when you will be camping out for nearly a month

Inching down from camp near Gemsbok National Park.

(some of our friends do think that bringing chopsticks for the occasional Chinese meal is excessive, but why not?). And the splendid thing about the Kalahari is that you travel in perfect safety. Any time you wish, leaving the sandy track that counts for a road, drive 300 metres into the bush, and you are effectively lost to the rest of the world. There are precious few places left where this kind of thing is possible. And where else would a pride of five lions walk past your breakfast table, their body language clearly stating: "We're OK! You're OK!".

No paradise is complete without its snake (of which there are plenty in Botswana, though they are rarely seen). On reaching the far south-western desert corner of the country, suitable trees under which to camp became increasingly hard to come by. We found a lovely Shepherd's Tree (*Boscia albitrunca*) in an otherwise featureless waste and stopped for the day — even though it was a bit early to camp. This tree is revered in the Kalahari for its dense shade. Both the San people (also known as Bushmen) and the Batswana have tribal rules that forbid its felling.

We set up camp with practised ease, uncapped a beer and a coke, and went about entering field notes on the portable computer and reading up on what had to be read up. After fifteen minutes Nancy says: "Hey . . . . there's a wood-tick on your leg". There is indeed. I get hold of one of the cigarettes I always carry in case flight attendants discover me smoking my pipe on aircraft, ready to do the thing in. It drops off well before I can zap it . . . . curious behaviour for a wood-tick. But, never mind.

Suddenly Nancy goes "Eeek!", and points accusingly at the ground between her feet. Literally thousands of ticks are milling about, ranging in sizes from the European wood-tick to monsters of six centimetres or more. Nancy is not a natural "outdoorsy" type, and this is definitely the kind of thing that gives the outdoors a bad name. As we flee out into the open sunshine, dim memories of something I have read begin to surface. And, yes, we have the book in our mobile library. They are Tampan Ticks (*Ornithodoros savignyi*). I have previously had occasion to write about leeches in these columns (1989. *Entomologist's Record and Journal of Variation,* **101**: 183-184); Tampan Ticks are even more primevally and atavistically horrible. "One Kalahari farmer reported collecting over 13 litres of engorged Tampans beside the bodies of three dead cows which had been killed by exsanguination or the draining of blood", reported my book dryly. This was not a bit of information to pass on to Nancy immediately. Always accentuate the positive and that was that Tampans only live in the shade of the trees. And at 15.30 the Toyota Hi-Lux was throwing enough shade for comfort so we were not unduly inconvenienced.

But, they really are awful creatures. Most humans react violently to their anti-coagulants. As with leeches, their bite is not felt initially. They can lie in wait for the unsuspecting camper (or, more likely, oryx or gnu) for up to eight years without a meal. The moment they feel the vibrations of footsteps, they emerge to do their dirty work. Anyhow, we now know what faced us, and staying out in the open was only a minor inconvenience.

However, again to accentuate the positive, our brush with this set of Tampan Ticks was about the worst misfortune to befall us during more than 25,000 kilometres of "*bundu*-bashing" in the Kalahari. If such a low disaster level could be maintained everywhere, the world would be a better place.— TORBEN LARSEN, 358 Coldharbour Lane, London SW9 8PL.

A new larval foodplant for *Falseuncaria ruficiliana* (Haw.) (Lep.: Tortricidae).

On the 20th July 1992 I decided to indulge in a few hours of general collecting on the Imber Ranges military training area in Wiltshire, searching an area known locally as "The Dragons Teeth" (ST 962465) — the name is derived from a type of tank obstacle constructed there for training purposes in the last war but is not marked on any map. Apparently the general area was in use for military training over a century ago and agricultural activity was modestly restricted even then. The effects of military training such as shell craters have resulted in interesting downland habitat and species such as *Coleophora lixella* Zell. and *Pyrausta nigrata* Scop. occur in some abundance here.

In an area of rather coarse vegetation I noticed a somewhat dense clump of yellow rattle *Rhinanthus minor*. The plants were in every stage of development and it was in one of the recently formed yellowish-green seed

capsules that I noticed a slight discoloration and by opening the calyx could see frass compressed between the wall of the calyx and the enclosed seed. I noted another seed capsule with similar slight discoloration and so picked a random sample of about two dozen stems of *Rhinanthus*. In due course between 16th August and 2nd September a total of four adult *F. ruficiliana* emerged.

Rhinanthus minor is closely related within the Scrophulariacea to a known foodplant, lousewort (*Pedicularis sylvatica*) although this species has not been recorded from this locality. Cowslip, *Primula veris*, is another recorded foodplant that does occur on Imber Downs. Because of the biology of these foodplants, and as *ruficiliana* is stated to be bivoltine, it is possible that the larval broods alternate between these two foodplants, at least in this locality and perhaps on other downland sites. *R. minor* has a very long flowering and fruiting period extending well into the autumn.

This discovery prompted me to check published references and to correspond with Mr. E.F. Hancock from Cumbria, who provided me with a reference to continental larval dates of June-July and September-April (Razowski *et al.* 1970, *Microlepidoptera Palaearctica*). Mr. Hancock adds that Razowski ". . . is not very informative regarding the life history of the species . . . . does not give dates for the adults . . ."

The British Literature tells a different story. Bradley *et al* (1973, *British Tortricoid Moths*) describe *ruficiliana* as being univoltine. Later, Stirling (*Ent. Rec.* **93**:10) describes the discovery that *ruficiliana* is bivoltine, noting that adults were found on 24th July. Emmet (1988, *A field guide to the smaller British Lepidoptera*) recognises the species as bivoltine in Britain and gives larval dates as May-June and July-April, the second generation overwintering fully fed from September. Thus there is a difference of opinion between British and Continental authors as to the timing of the second generation with a discrepancy of some two months.

Ruficiliana may, of course, be univoltine where local conditions or climate may impose some restriction on the species.

It is important to bear in mind that my specimens were bred through in captivity, and even though I had them for only about five weeks and they were kept out of doors, my results may not have been repeated in the wild. However, having said that I would find it difficult to believe that my captive stock, if of the overwintering generation, would be so influenced by conditions that they would emerge from mid-August to September, particularly as the species is stated to overwinter full-fed, pupating the following spring. Naturally data from captive breeding projects cannot be accepted as referable to conditions in the wild but I think there is sufficient evidence here and in the above references to suggest that our knowledge and published accounts are still incomplete. There would appear to be a possibility that the broods overlap or are more extended than is realised, or in favourable seasons such as 1992 *ruficiliana* might have three broods. It is possible that Razowski's data for the second larval brood might in fact refer to a third brood.

As far as I can determine the majority of records of *ruficiliana* concern wild taken adults from mid-May to early June and adults bred or caught wild in the second half of July. Records of overwintering stock appear to be very thin on the ground. 1992 was an unusual year and therefore in the interest of clarifying the life history of *ruficiliana* it would be of interest if any lepidopterist has adults, particularly from late August or September, taken in the wild or bred in a more average season. In addition in localities where the species is considered to be bivoltine how frequently have larvae taken in July and early August been bred through to adults in the following May-June?

I would like to record my thanks for assistance, information and comments generously supplied by Mr. E.F. Hancock of Ulverston, Cumbria.— M.H. SMITH, 42 Bellefield Crescent, Trowbridge, Wilts.

Euplagia quadripunctaria (Poda) and *Lymantria dispar* (Linn.) in the Isle of Wight.

On the 19th August I took a female example of *Euplagia quadripunctaria* (Poda) at light in my garden at Freshwater. This moth was on the grass outside the moth-trap and the right hand wings were torn. It may have been eaten by a Blackbird which must have rejected it after finding that it was distasteful. On the 21st August Dave Wooldridge took a male of the same species at light in his moth-trap at the Causeway in Freshwater. Two years previously on the 11th September 1991 I found a dead male specimen of this insect on a track leading from Tennyson Down during a time of considerable migrant activity. I suggest that these recent captures are the offspring of those 1991 migrants and that it may have become temporarily established in the West Wight. The only other migrants recorded at the time were *Udea fulvalis* (Hübn.) on the 8th and 11th August which are the first records for the Island since 1959. This species may also have become temporarily established here as it has in the late Ted Wild's garden at Highcliffe in Dorset. *Autographa gamma* (Linn.) was also recorded at the time.

I should also like to report the capture by Simon Colenutt of *Lymantria dispar* (Linn.) at his mercury vapour light trap at Chale Green. This is only the second record of this species for the Island, the first being taken by Peter Cramp at light at Godshill in 1991.— S.A. KNILL-JONES, Roundstone, 2 School Green Road, Freshwater, Isle of Wight.

Nascia cilialis Hb. (Lep.: Pyralidae) in Norfolk and Suffolk

I have just recently seen the newly issued JNCC Report by Mark Parsons (1993, *Review of the scarce and threatened pyralid moths of Great Britain*) in which the main distribution in Britain of *Nascia cilialis* is given to be Cambridgeshire, Norfolk and Suffolk. The larval food and habits quoted in this report seem to follow the original accounts given in Buckler *Larvae of British butterflies and moths* vol. 9, and as these seem not to be in accord with my own observations I add here my comment. Thus the many

larvae I have seen have always come from small narrow-leaved softer sedges, and I am not aware that the giant prickly *Cladium mariscus* has been present, still less eaten by *cilialis* larvae. Indeed when working sedge-beds I find as I move into the coarser, taller plants that form their own exclusive community, so I cease to find larvae of any species, certainly no *cilialis*. The larvae is most plentiful in groves of *Carex elata* that can be worked only when their site dries up, but I have swept the larva also from mixed vegetation where the *Carex* grows as single stems, not in tussocks. In both instances the leaf form is soft and narrow, not broad and hard.

I have kept and reared through the species on a number of occasions. Larvae in captivity spin their tough cocoon between tightly packed sedge leaves, or they may use *Carex* in association with paper lining. The sites where I currently work have no reed at all, so that the species most certainly does not have need to enter reed stems in order to pass the winter.

I did not know that this Pyralid was still supposedly known only from Cambridge and Hunts (*Ent. Rec.* **105**: 218). As long ago as 1952 Victor Day and I used to find larvae freely at Stoke Ferry Fen and in recent years I have been beating out larvae in numbers from *Carex elata* at Watton when looking for noctuids. It has long been recorded from Foulden Common. The larvae is a most beautiful creature of rich yellow with crimson dorsum centred by whitish with a pale blue tinge, and it is an easy one to rear to the pupa. The moth has come to light trapping in contrasted sites in Norfolk from its home in water meadows and dry fens to birch-heath and even in pine plantations at some distance from breeding sites. Further east the moth has been recorded by Norfolk Moth Group members from the Broads at St. Olaves, Hickling and Burgh Common.

The Santon Downham Rothamstead trap being but a hundred yards south of the River Ouse is virtually on the Norfolk-Suffolk boundary, and we have seen the moth in Market Weston and Thelnetham fens which are in the valley head of the Little Ouse, and again in neighbouring Lopham Fen at the source of the Waveney, all these sites being also along the county boundary.

Although not known to Morley (*Lepidoptera of Suffolk*, 1937) *Nascia cilialis* was recorded from a number of locations between that date and 1960 when Alston published his Supplement to the main work again in *Transactions of the Suffolk Naturalists Society*; Alston gives records of the species from Brandon, Flixton Marshes, Kessingland Denes, Waldringfield and Walberswick.— G. M. HAGGETT, Meadows End, Northacre, Caston, Norfolk NR17 1DG.

Two notable Staphylinidae (Col.) in North Hants

The two somewhat rare species recorded hereunder may well be additions to the beetles of North Hampshire, much less intensively worked than the southern vice-county. They were found recently among unset material.

Philonthus corvinus Er.: a male caught flying in bright sunshine in the vicinity of Woolmer Pond, 1.iii.1953; it puzzled me at first, but Mr P.M. Hammond, to whom I had sent a sketch of the aedeagus, kindly suggested what proved to be its true identity. *P. corvinus* appears to become less scarce towards the north; my late friend G.H. Ashe told me that it was not uncommon in marshes in the Edinburgh district.

Omalium rugatum Muls. & Rey: also rare in the south-east, less so towards the west and north. One occurred in debris from the R. Rother at Liss, 14.v.53. I owe to my namesake Mr S.E. Allen the opportunity of collecting various interesting species in that area.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Eurydema oleraceum (L.) (Hem.: Pentatomidae) in 1992-3

Before entering on the main subject of this note, I should mention that I mistakenly assigned the feminine gender to this bug's trivial name when writing of it last year (1992, *Ent. Rec.* **104**: 79). It should have been neuter, as above (see L.W. Grensted,1952, *Ent. mon. Mag.* **88**: 141). For some reason, however, Canon Grensted's note has been widely overlooked and most authors since have written *oleracea*. I must plead guilty to having let myself be swept along unthinkingly on that tide!

In my previous note I remarked on the apparent extreme localisation of the species on Woolwich Common near here, at all events in the autumn of 1991 when I first found it, after considerable search, in the nymphal stages. It is worth adding now that in the following year it appeared to have increased markedly. On 17th May, a suitably warm afternoon, I espied two adults rather low on the outer foliage of one of the many then young plants of *Armoracia* on the common, but nowhere near the 1991 site; and a third on another plant. Two of them were of the strikingly handsome form having the markings rich red — the first time that I had met with it. A few further (typical) examples were swept not far away, one coming off an isolated tall mignonette (*Reseda lutea*), but the foodplant was near at hand. In June, nymphs of different sizes were several times encountered, again on horseradish, in a third area nearer the original one — especially on sunny evenings. Dr. I.S. Menzies informed me that the bug had been exceptionally frequent in the same year, 1992, in a small ruderal area on Bookham Common, Surrey, on (I believe) the same host. Clearly, therefore, *E. oleraceum* enjoyed an unusually good season that year; in contrast, I noticed none the following year on the common, but made no special search.

Finally, on 18th August 1993 I met with further specimens in a new locality for this district, alongside the Thames towards Greenwich. An adult and a nymph were sighted on horseradish, and another adult almost hidden in the yellow flower of some composite on the foreshore. Here the foodplant was a very minor component of the local flora.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Glyphipterix simpliciella **(Steph.) (Lep.: Glyphipterigidae) in Scotland**

While on holiday in Scotland I found several specimens of *Glyphipterix simpliciella* (Steph.). This was at Achiltibuie (VC 105, West Ross — NC 024085) on 28.v.1993. It was in the early part of a warm and sunny afternoon and the moths were in buttercup flowers.

I thought this record of interest as in Vol. 2 of *The Moths and Butterflies of Great Britain and Ireland* it says *Glyphipterix simpliciella* "has not been recorded from the north mainland of Scotland — perhaps because it has not been sought in these areas."

I am grateful to Dr M. Hull for checking the identification.—MARY HARROP, 24 Delph Common Road, Aughton, Ormskirk, Lancs L39 5DW.

A further record of *Schrankia intermedialis* Reid, the Autumnal Snout (Lep.: Noctuidae), in Kent

A single male of *Schrankia intermedialis* Reid was caught in the Rothamsted Insect Survey light trap operating near Fagg's Wood, Warehorne, Kent (Site no. 478; O.S. grid ref. TQ988 346) on the night of 21/22.ix.1992. Identification was confirmed by examination of the genitalia.

This is only the sixth specimen known; one was recorded at the above site in 1988 and four others have been caught in Hertfordshire (Riley, A.M. (1989) *Schrankia intermedialis* Reid (Lep.: Noctuidae), the autumnal snout, in Kent. *Entomologist's Rec. J. Var.* **101**: 166). Nothing is known of the biology of this taxon, which is suspected of being a hybrid between the closely related *S. costaestrigalis* Stephens and *S. taenialis* Hübner. Confirmation of its presence in the Kent locality may lead to more extensive research in the area.

Thanks are extended to Neil Davies for operating the trap at Warehorne and to Bernard Skinner for his helpful comments.— ADRIAN M. RILEY, AFRC Farmland Ecology Group, Dept. Entomology and Nematology, IACR, Rothamsted Experimental Station, Harpenden, Herts. AL5 2JQ.

Margaritia sticticalis **Linnaeus (Lep.: Pyralidae) in Breckland**

In the recently published *Review of the scarce and threatened pyralid moths of Great Britain* (Parsons, 1993) it is suggested that *Margaritia sticticalis* has been extinct as a resident species since 1970, and all records since that date refer to immigrants. I would like to put on record that in 1989, 1990 and 1991 I recorded this species from a scattering of sites across Breckland, in both Norfolk and Suffolk.

Although recorded from only one site in 1989 there were several moths seen, as there were on each subsequent occasion it was noted. Such numbers would seem to indicate a resident population, if only temporarily, and one that in some ways mirrors the Breckland occurrences of *Scopula rubiginata* Hufnagel. It is suggested that *M. sticticalis* could be among that group of species that establish resident populations, for a period of at least

a few years, following a strong migration. Such populations would require periodic re-inforcement to be continuous and the recent, apparently, barren period could reflect the absence of such migrations.

The restricted sites at which *M. sticticalis* was recorded were not visited, at the appropriate times of year, in either 1992 or 1993, but there is every reason to believe that even a short term resident population would have continued through these years.— MICHAEL R. HALL, "Hopefield", Norwich Road, Scole, Diss, Norfolk IP21 4DY.

Some experiences with *Agrius convolvuli* L. (Lep.: Sphingidae)

I recently had opportunity to look through assorted papers left by Rick Pilcher and thought this account of the Convolvulus Hawkmoth warranted publication. Although undated the note was written when he still lived at Boston, Lincs and would date from about 1965. Rick continued to grow beds of *Nicotiana* at Boston where the size of his tobacco flowerbeds were huge, and he followed the practice if on a reduced but still substantial scale after moving to South Thoresby, where he invariably still saw the Hawkmoth in most seasons.

"The attraction of the flowers of *Nicotiana affinis* for *H. convolvuli* is well-known and in 1946 thirty-six specimens were taken at these flowers in my garden. Since that year odd specimens have been taken in most years and since my m.v. light trap was first put into operation six years ago, in about equal numbers at the flowers and in the trap. Last year it was decided to grow the *Nicotiana* in a large mass and at a different site twenty yards from, and therefore well within the presumed attracting range of, my moth trap. No specimens were seen last year either at the flowers or in the trap, presumably because it was not in this area 'convolvulus year.'

This year under the same conditions the first *convolvuli*, a male in perfect condition, was found in the trap on the morning of 30th August. Watch had been kept for the previous week, beginning at a date when experience had taught me the first *convolvuli* might appear, and no moth had been seen on the evening of the 29th, nor was it present in the trap at midnight. On the evening of 2nd September a specimen was seen at the *Nicotianna* flowers at that stage of dusk when it is just not too dark to see. The trap was switched on immediately but it was not until some minutes later, when the light had reached its full brilliance and it was appreciably darker, that the moth became restless, no longer feeding for any length of time at an individual bloom but flying rapidly from one bloom to another, and finally flew swiftly away in an opposite direction to the trap. No specimen was present at midnight; a specimen was present in the trap next morning.

On the mornings of the 5th, 7th and 8th September specimens were present in the trap in the morning. It had not been possible for various reasons to keep an effective watch on the *Nicotiana* at dusk on the previous evenings and the traps were not examined at midnight.

On the evening of 10th September a specimen was caught at the *Nicotiana* flowers, marked and released the following evening on the other side of a high hedge one hundred and fifty yards from the trap. Its subsequent behaviour could not be seen as it was released at rather late dusk. It was not present in the trap at midnight. It was present on the following morning when a second specimen was also present. This second specimen was also marked and they were released at different sites, always behind high cover in order to screen the light, at distances varying from 200 to 300 yards from the trap. In spite of the possible counter attraction of brightly lit lamps, not switched off until after midnight, on the road on which I live, the two released specimens were present in the trap on the two following mornings. On the third occasion only one specimen, the first caught, was present in the trap the next morning. Neither moth appeared after this.

The distance from which the moths returned was certainly well beyond the probable "attraction range" of the m.v. lamp and it was probably the scent of the *Nicotiana* which drew them within the effective range.

I must confess that I have never kept an effective watch on my *Nicotiana* before dawn, but my experiences suggest that the moth, like many others and notably the Celeriids, has two main times of flight. The first is at dusk before it is really dark and the m.v. trap is really effective; the second is before dawn and while it is still dark enough for the m.v. light to be effective.

The inquisitiveness of this moth has been frequently recorded and Barrett states that it has been known to visit and to sample with its proboscis a bright red jacket. On two occasions before the last war I have seen specimens leave the *Nicotiana* and fly to my shirt-front for a brief inspection, as I walked round my garden after dinner in the dusk. No doubt, *convolvuli,* conditioned to the white of the flowers, regarded my stiff white shirt as a bloom of exotic quality. The very audible "whirr" of the wings added a great thrill to the experience.

If this inquisitiveness is well-known, I cannot recall having seen any record of another aspect of its behaviour. Bred specimens placed on a white tablecloth, where their procrypsis is of no value, when irritated by gently rubbing their heads and antennae, adopt a most impressive threat posture. They draw themselves to their full height on fully extended legs, curving their abdomen downwards and beneath them and so displaying what is not normally a very noticeable feature, a much more deeply marked red and black first abdominal segment overlapped by a black and blue extension from the thorax. These markings are displayed with an almost startling suddenness as the moth sinks into a relaxed position and then abruptly rises into the threat posture. Yet when the same moths were placed on a treetrunk, where their procrypsis was of value, they kept perfectly still, tighly clasped to the tree trunk, even when they were roughly handled and even lifted away.

A. convolvuli is easy to rear from the egg and presents no problems other than one I met with in 1933 when an early October frost entirely killed the normally too abundant cornbine in my garden and I was left with 86 larvae in their penultimate instar, which one could imagine howling for food. Frantic forcing of *Convolvulus* found in a sheltered corner only partially solved the problem. I treat them in their last instar as I do *atropos*. When the full-grown larva starts to take its restless walk round the breeding cage looking for a pupating site, I place it in a large flower pot containing peat, earth and sand and covered with a piece of muslin. The larva promptly burrows and the pot is put in a frost-proof out-house for three to four weeks. The pupa is then dug out of its earthen cocoon and placed in a biscuit-box between moss and placed in my linen cupboard. The linen cupboard is a strictly household appliance, to which I am allowed access only on sufferance; it certainly approaches a tropical heat at times and the temperature is dependent on the household's demands on the hot water. However, it works; the moss is dampened each evening with warm water and three to four weeks later a moth emerges. One or two pupae have died but I have never had a cripple with this technique.

I find that the females of the early summer lay freely, especially if kept in rather close confinement. Females of the autumn brood seldom lay and those that I have dissected have had only rudimentary gonads. Probably the climate of the east coast is unsuitable for full development of the locally bred insects, and the only autumn fertile female I have caught was probably herself an immigrant. I have only found or had brought me larvae of this moth in July and never larvae from the late summer brood."— The late RICK PILCHER, via G.M. HAGGETT, Meadows End, Northacre, Caston, Norfolk NR17 1DG.

***Inachis io* L. (Lep.: Nymphalidae): second generation larvae.**

On 10th September 1993, three groups of these larvae, rather less than half grown and presumably emanating from a butterfly which emerged in 1993, were observed on a patch of stinging nettles (*Urtica dioica*) in an open situation between two fields at Dartford. They were noted daily until the 15th, but on the 17th they had disappeared, presumably having dispersed to pupate.

Such observations appear to be very rare. J.M. Chalmers-Hunt (*The Butterflies and Moths of Kent*, 1962) gives none, and C. Plant (*Butterflies of the London Area*, 1993) states that there are no such records for the area.

This is a particularly surprising occurrence in view of 1993 having a very poor summer in south-east England with *I. io* being scarce, although less so than *Aglais urticae* L. I had wondered if these September larvae would produce butterflies during the autumn. However, in 1976, the year of the long, hot, dry summer, several instances of September *I. io* larvae were

recorded, and C. Lipscomb (*Ent. Rec.* **89**: 18) may have provided the answer in an interesting account in which he reports collecting a brood of these caterpillars in late September which produced butterflies in early October, although not quite under natural conditions; he comments that the pupal stage lasted only about a week.

The very occasional occurrence of a possible second generation in this species is particularly interesting as it is probably univoltine throughout its geographical range. L. Higgins and N. Riley (*Butterflies of Britain and Europe*, 1970) state that it is univoltine throughout Europe. Also it is in Japan, where it tends to have a northerly distribution, according to M. Yokoyama's textbook on Japanese butterflies (1956).—B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Parocystola acroxantha Meyrick (Lep.: Oecophoridae) at Berrow in Somerset

On the night of 31st August/1st September 1993 I caught a specimen of this species in a m.v. trap in our garden at Berrow, Somerset (VC6). This constitutes the first record for this vice-county. However, not the first for Somerset (see Youden, G.H. *Ent. Rec.* **95**: 103).— BRIAN E. SLADE, 40 Church House Road, Berrow, Burnham-on-Sea, Somerset TA8 2NQ.

Chloroclystis chloerata Mabille, the Sloe Pug (Lep.: Geometridae) in Wales

A single male of *Chloroclystis chloerata* Mab. was caught in the Rothamsted Insect Survey light trap at Cardiff (Site no. 347; O.S. grid ref. ST 199 789) on the night of 17/18.vi.1993. So far as I am aware, this species has not previously been recorded in Wales. The fact that it has been found in several of the bordering counties suggests the species is likely to be present elsewhere in Wales but so far been overlooked.

Thanks are extended to Roger and Vicky Smith for operating the trap at Cardiff and to Bernard Skinner for his helpful comments.—ADRIAN M. RILEY, AFRC Farmland Ecology Group, Dept. Entomology and Nematology, IACR, Rothamsted Experimental Station, Harpenden, Herts AL5 2JQ.

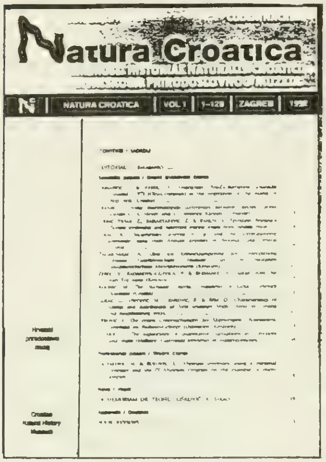
BOOKS AND JOURNALS

Natura Croatica — Journal of the Natural History Museum of Croatia. Two issues per year. Volume 1 (pp 1-128) 1992. Subscription US dollar 35. from BTS, Knjiga tryovina d.o.o., Kptol 25, 41000 Zagreb, Croatia.

Recent reorganisation of the museum service in Croatia, following the breakup of the former Yugoslavia has prompted the publication of this new journal to bring together and promote natural history in the newly created state of Croatia. This first issue is well produced with many clear, monochrome, illustrations. Coverage is very broad including geology,

palaeontology, zoology and botany. There are two papers of interest to entomologists — one by M. Kucinic on the Noctuidae of Licka Pljesevica mountain, and another by F. Perovic on the sawflies of Biokova mountain.

Papers are in English, German or Croatian, with English or Croat summaries. The editors and publishers provide an up-beat introduction to the launch, from which this small quotation will provide a flavour:



". . . while we are writing this introductory text, a shockingly cruel, destroying and conquering war in Croatia and neighbouring Bosnia and Herzegovinia is still going on. So, why are we starting a new enterprise so optimistically? Where does all this self-confidence of ours come from? Both our optimism and self-confidence are founded in the bottom of our hearts, because we know that we are suffering a great injustice and that we are fighting against it. Besides, only one superficial insight, not only into the richness and interestingness of *natura croatica,* of museum collections and museum staff, but also an insight into our past inspires and justifies all our hopes . . . ". We wish the journal every success.

Larger Moths of the London Area by **Colin W. Plant.** 214pp., A4. Boards. London Natural History Society, London. 1993. £19.95.

This volume is the successor to *The butterflies of the London Area,* by the same author, published in 1987. This work is a more ambitious undertaking. The introduction includes useful sections on definition of the area with map showing London borough and county boundaries, geology, habitats, recording (past and present), validation of records, status (ten categories), voltinism, larval foodplants, sources of information and acknowledgements.

The bulk of the volume, 234 pages, is devoted to the recorded species. All known records are cited for the rarer immigrant and very scarce species with the aid of distribution maps for some of the latter, these indicating separately old records and those for 1981-1991. A large, clear distribution map based upon tetrads, and with county boundaries marked, accompanies each report of a resident species, usually based on the 1981-1991 period only. A transparent overlay is provided to place records in the context of the National Grid and tetrad systems, as well as indicating county boundaries, chalk or woodland and built-up areas. These reports cover voltinism, melanism, frequency, distribution, and in particular any changes in these. Polymorphism, including aberrations, also receive some

attention. The reports, especially where concerned with current trends and anomalies in frequency and distribution are excellent; there are however, several omissions and apparent inaccuracies. Melanism is not mentioned for *Ectropis bistortata* and *Hydriomena furcata*; melanics of both have been reported for the London area. For *Chloroclysta truncata* the statement that ab. *rufescens* Strom. is "confined to the second generation, as has been suggested by Chalmers-Hunt" is erroneous, the form being genetically controlled and appearing in all generations. *Eupithecia plumbeolata* is stated to have occurred at Dartford from 1981 to 1991; should not this read "Darenth Wood"? The map for *Apoda limacodes* conveys the impression that the species is absent from the Kent area; it is common at Dartford, 57B. How curious that with numerous well defined, named forms including melanics, *Orthosia incerta* is ignored from this aspect, as it is by Chalmers-Hunt (*The Butterflies and Moths of Kent*, 1968)!

Works of this nature very rarely provide authentic information on larval foodplants; those listed in this volume are genuine and are from observations within the London area.

A series of Appendices includes a comprehensive checklist based upon the constituent counties, in which the status category is quoted; a list of species according to the numbers and percentages of the tetrads for which each species is recorded; a gazetteer of localities, a list of useful addresses and a description of the functions of the London Natural History Society. An index includes popular and scientific names, both specific and binomial.

This volume is clearly printed on good paper, well bound and attractive in all respects, and more important the author has sifted records to include only those that are accurate, by, for example, the use of voucher specimens and insisting on genitalic corroboration for certain species. Almost any criticism must refer to the nature of the project rather than to any shortcomings by the author. Even in this relatively well worked part of England the distribution maps frequently appear to reflect that of static light traps and favourite sites. Thus the reviewer's tetrad is in the highest category for moth records, that immediately to the west is the lowest despite their similarity in habitats — and all for the want of a few more yards of flex and the use of a neighbour's garden! However, the maps indicate that some very rich localities are under-recorded, including Eynsford, Farningham Wood and those parts of Darenth Wood in three of its four tetrads, yet the first of these localities has been well worked. *Apoda limacodes* is shown as absent from the Kent area; it remains not uncommon in tetrad 57B. Nevertheless, some maps illustrate interesting distribution patterns which are valid and puzzling. Two particularly interesting maps illustrate the recent colonisation of the whole London area by *Lithophane leautieri* and the partial colonisation by *Aporophila nigra*; whereas a number of species appear to have a southerly distribution, two show a northerly one, *Xanthothoe quadrifasciata* and *Selenia lunularia*.

The volume presents an excellent appraisal of the larger moths of the London area; the author has endeavoured to make it as accurate as possible. Unusually for this type of work it makes very interesting reading; it is not merely for reference. No lepidopterist in the London area and the home counties should be without a copy; it also has a wider appeal to the more general naturalist, and it provides an ideal model for anyone contemplating producing a local work in any branch of natural history, but particularly the macro-lepidoptera in which hitherto the expertise has frequently been somewhat lacking. The author is to be congratulated on what is a truly remarkable publication; the London Natural History Society has produced a wonderful advertisement for itself. One hopes that this book will become the firm foundation and model for the publication of the results of similar surveys for the London area in the future. B.K. West.

Lepidopteros Defoliadores de *Quercus pyrenaica*, Willdenow, 1805 by **Santiago Soria.** 302pp., 196 colour illustrations. Paperback. Published by Ministerio de Agricultura, Pesca y Alimentación. ISBN: 84-505-6680-0. Price 3000 Pts (approx. £15.00).

The dearth of decent books on the British market which deal exclusively with Lepidopterous larvae, especially those of the moths, seems to be in the process of being rectified thanks to the literature available in Spain.

I lived there between 1988 and 1991 and was overwhelmed by the quality of information on offer in the form of beautifully produced books replete with full colour photographs, indispensable as field guides.

Living in Madrid, I came across no less than four species represented in the lasiocampid genus, *Malacosoma* (Hübner, 1820). I would have been at a loss to have been able to have identified them, but was able to make good use of the works on the larvae found in Spain by Carlos Gómez de Aizpúrua in addition to the volume which occupies our attention here by Santiago Soria Carreras.

The book which is a result of a thesis undertaken by Sr Soria Carraras between 1981 and 1986, may deal exclusively with the lepidopterous fauna to be found on one species of oak, *Quercus pyrenaica* (Willdenow, 1805), but its relevance to the entomologist goes far beyond that.

The book covers in detail fourteen families of the Lepidoptera, including the Geometridae, Noctuidae, Lasiocampidae, Plutellidae and Tortricidae.

Each species is dealt with in sections citing the following; Spanish data; specimens captured by the author on *Q. pyrenaica*, description of each stage, the species' life cycle; distribution in Spain and the rest of the world, and its influence if any, on *pyrenaica*, as well as the appropriate steps to be taken should it assume pest status (the book is written with the Forestry Commission, Spanish equivalent, in mind).

There are 72 species described with 28 accounts belonging to the Noctuidae. Apart from the photographs themselves there is a very useful Appendix illustrating male genitalia. The work opens with details on collection of specimens in the field and preparing genitalia.

Two species of *Malacosoma* are described in detail here, *neustria* (Linnaeus, 1758) and *alpicola,* (Staudinger, 1870). Illustrations include a close shot of mounted head-capsules of three species from this genus (the last two named plus, *castrensis*). This is in addition to and close ups of the larvae themselves both in the field and in captivity. Four other lasiocampids not found in Britain are also dealt with; *Trichiura castiliana,* (Spuler, 1908), *Phyllodesma tremulifolia* (Hübner, 1809-10), *P. kermesifolia,* (Lajonquiere, 1960) and *suberifolia* (Duponchel, 1842).

Obviously, the entomologist with a special interest in Spain would be best served by this publication, but there are a number of species described also resident in the UK.

The text is in Spanish, but its usefulness for the British non-Spanish speaking entomologist has lead me to embark on a translation. In the meantime, copies can be ordered from: Natural History Book Service Ltd., 2/3 Wills Road, Totnes, Devon TQ9 5XN. Gareth Clumo.

Journal of the Ukrainian Entomological Society. Quarterly publication Volume 1 (pp 1-62) 1993. Private subscription US dollar 40. via Mr Willy de Prins, Dikmuidelaan 176, B 2600 Antwerpen, Belgium. Published by Apollo popular science publishers, Schmalhausen Institute of Zoology, 252601 Kiev MSP, Ukraine.

A new entomological journal from a new country recently separated from the USSR. For those used to the depressingly poor quality of publications from eastern block countries, this journal will come as a surprise. Attractively produced with many good colour illustrations it even contains a page with the words ". . . this page is for an expected and unexpected advertisement. Advertising means contribution to this journal. . . ."

The text is in Russian, with brief summaries in English. As well as reports and reviews, this first issue contains articles on rostral segments of assassin bugs; new taxa of Cicindelid beetles from Ukraine and Turkmenistan; notes of the Dytiscid fauna of the Crimea; Ichneumonid wasps of the genus *Noxocremastus* from the Palaearctic; Macrophotography of wild insects (well illustrated); New Pamphiliid sawflies from Talysh; new ants from Vietnam; new wasp species of *Gorytes* rom Kazakhstan and predators of the weevil *Rhamphus oxyacanthae* in apple orchards. Clearly, the Ukraine is in need of some good lepidopterists!

Help wanted — Peak District

Records of sites/species of invertebrate conservation importance wanted for the Peak District National Park; must be site-specific and significant. If you hold any useful records please contact RHODRI THOMAS, Ecologist, Peak Park Joint Planning Board, Aldern House, Bakewell, Derbyshire DE45 1AE. (Tel: 0629 814321).

The British Entomological and Natural History Society is pleased to announce that its very successful book *British hoverflies: an illustrated identification guide* by A.E. Stubbs and S.J. Falk is now available again after being out of print for two years. Since its original publication in 1983, this book remains the definitive guide to the British hoverfly fauna, and with over 190 species being illustrated on the 12 spectacular colour plates it is also one of the most attractive. A 16-page supplement was added in 1986. Hardback copies are available at £26 each, plus £2.80 postage and packing (£3.50 overseas), from the Sales Secretary, R.D. Hawkins, 30d Meadowcroft Close, Horley, Surrey RH6 9EL. The BENHS is a registered charity, number 213149.

CONTRIBUTIONS

Readers are reminded that they are the main source of material for the Journal. We urgently need papers, notes and observations for publication, particularly on British and European Lepidoptera, Coleoptera and other orders. Please see the front cover for details of how to contribute.

Contents and Special Index

The contents and special index for volume 105 (1993) will be distributed with the March issue of the *Record*.

KATIE EMMET

It is with great sadness that we hear of the death of Katie Emmet on 23rd December 1993. Although not an entomologist by calling, she participated willingly in field work, developing a keen eye for leaf mines — often spotting those missed by "real microlepidopterists", and was warmly welcomed when she applied for membership of the British Entomological and Natural History Society in 1984. A charming and courteous hostess, Katie will be greatly missed by all who knew her. We extend our sympathy to Lt. Col. Maitland Emmet on his loss. Paul Sokoloff.

THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

(Founded by J.W. TUTT on 15th April 1890)

Contents

Notes and observations

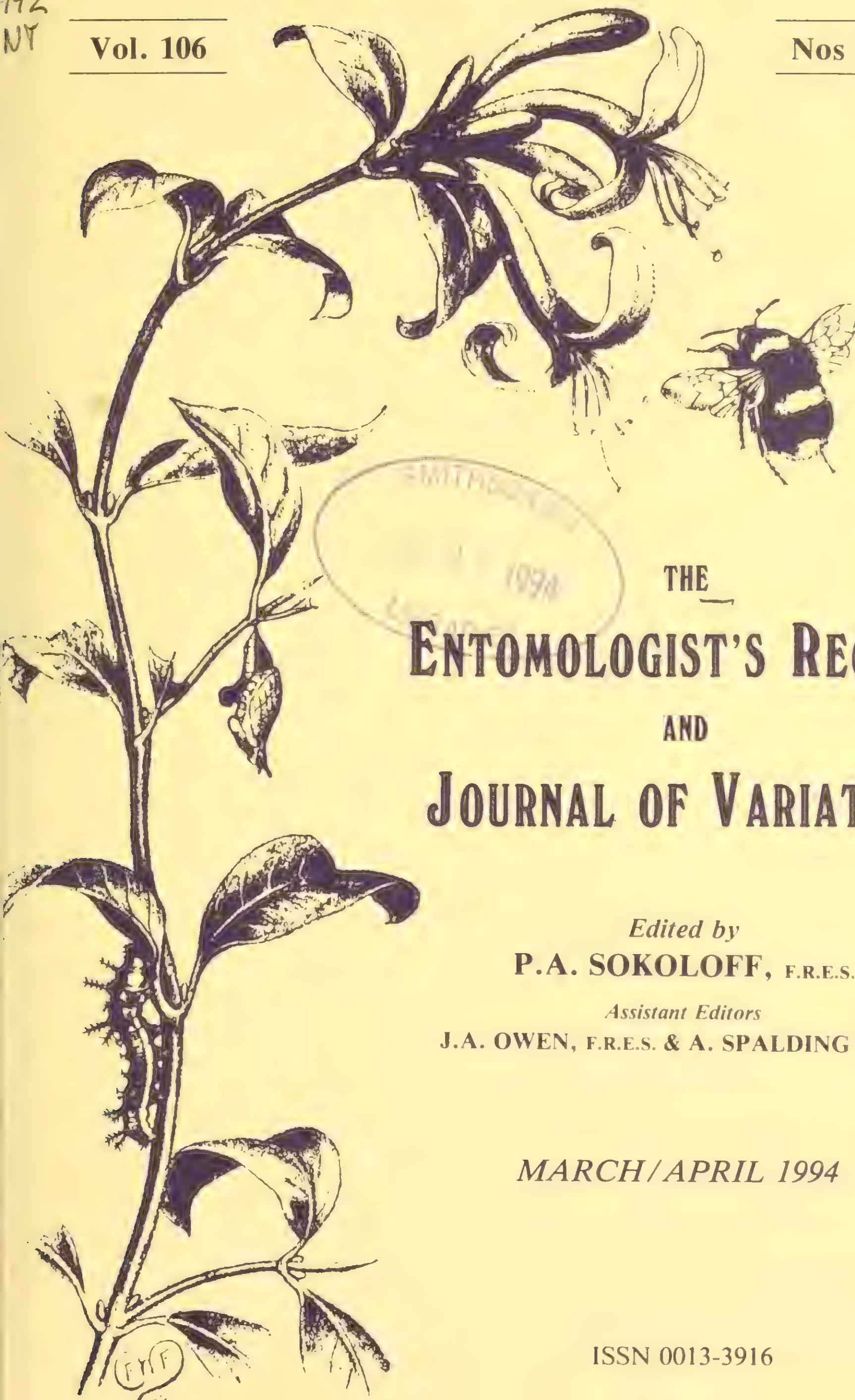
SPECIAL NOTICE. The Editor would be willing to consider the purchase of a limited number of back issues.

Printed in England by
Cravitz Printing Company Limited, 1 Tower Hill, Brentwood, Essex CM14 4TA. Tel.: 0277-224610.

PUBLISHED BI-MONTHLY

Vol. 106

Nos 3—4



THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

Edited by

P.A. SOKOLOFF, F.R.E.S.

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J.A. OWEN, F.R.E.S. & A. SPALDING F.R.E.S.

MARCH/APRIL 1994

ISSN 0013-3916

THE
ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

WHERE TO WRITE

EDITOR: All material for publication and books for review.
REGISTRAR: Subscription changes of address and non-arrival of the Journal.
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Notes for Contributors

It would greatly help the Editor if material submitted for publication were typed and double spaced. Two copies are preferred. Please DO NOT use block capitals and DO NOT underline anything except scientific names. Word-processed text should not use italic, bold or compressed typeface. References quoted within the text can be abbreviated (eg Ent. Rec.), but those collected at the end of a paper should follow the standard *World List* abbreviations (eg. Entomologist's Rec. J. Var.). When in doubt try to follow the style and format of material in a current issue of the *Record*.

Illustrations must be the original (not a photocopy) without legend which should be typed on a separate copy. Photographs should be glossy, positive prints. Authors of long papers, or submitting valuable originals are advised to contact the Editor first.

Contributors are requested not to send us notes or articles which they are sending to other magazines.

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THE INCIDENCE OF *LAOTHOE POPULI* L. (LEP.:SPHINGIDAE) IN NORTH-WEST KENT, 1969-1993

BRIAN K. WEST

36 Briar Road, Dartford, Kent DA5 2HN.

FOR MANY YEARS, without checking my records, I had believed that this moth's main period of appearance was in late May and June, followed by a few moths of a second generation in late July and August, in this part of England. My garden m.v. light has been in operation for twenty-five years, and *L. populi* has been a regular visitor in its season throughout this period in which numbers have steadily increased. For the fourteen years from 1969 the average per year was 16, followed by 41 from 1983 to 1987 inclusive and 78 for the next six years. Until 1982 almost all specimens were singletons, but in recent years there have frequently been several specimens, up to as many as six, per night.

There has been a general consensus of opinion expressed in the text books until Heath and Emmet, (1979) and Skinner (1984). Thus Barrett (1895) states that the moth is regularly double-brooded, the first brood in May and June, the second in late July and August. Tutt (1902) states normally May and June, in late seasons July, but in early seasons a partial second brood in late July and August, there being a pupal stage of three to four weeks; the inference being that the second generation occurs only in early years. The life history chart in Newman and Leeds (1913) gives May, June and July, but notes that *L. populi* is partially double-brooded in the south. Finally South (1939) states May and June as a rule, but in backward seasons the moths may not emerge until July or even August; however, he adds that moths may emerge in late July when eggs are laid in May. In addition three local works refer to the matter. Chalmers-Hunt (1968) for Kent corroborates regarding the presence of a partial second generation which he states "occurs fairly often". He notes the earliest appearance as 30th April 1845 at Lewisham (excluding a specimen seen at light in January 1922) and the latest date 1st September 1957. For north-east Surrey L. and K. Evans (1973) quote that twenty-four specimens were noted at Addiscombe between 25th May and 10th August 1969, and nineteen between 28th May and 14th August 1970; the latest date given is 1st September 1969 at Carshalton. The recently published work by C. Plant for the London area (1993) states that the moth is univoltine most years, flying from the second week of May until the first week of July; a partial second generation is recorded some years, particularly those with hot summers such as 1990 and 1991.

In these textbooks the contention is whether the second generation is partial, i.e. affects only a proportion of the moths each year or/and occurs every year or only in some years. The time span (May to August) is not in contention. The two latest books deviate from this pattern. Heath and

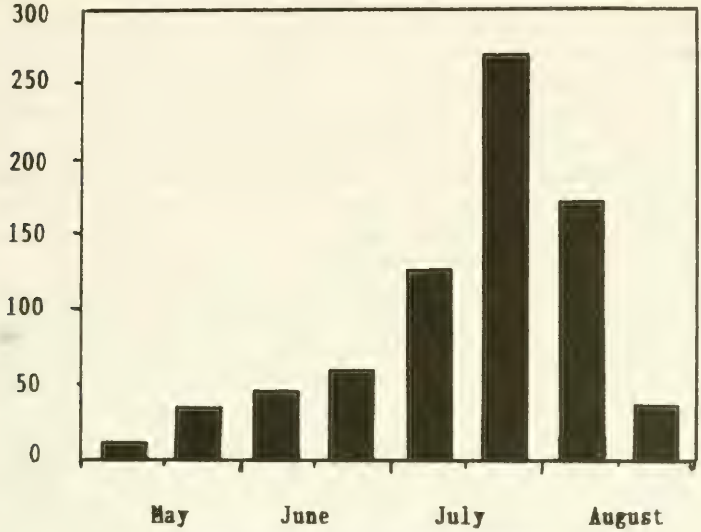
Emmet (1979) are precise and separate the two generations when present: "univoltine, occasionally bivoltine. Flies from dusk onwards in May and June; a small second brood may occur in the autumn". Skinner (1984) gives the first generation from May to July, plus an occasional second generation in August and September. Thus these two recent works are in agreement that the second brood is only occasional and that September is included as a month for the moth's appearance.

The accompanying table illustrates the number of *L. populi* attending my garden m.v. light for the period 1983 to 1993, each month being divided into two. The period 1969 to 1982 is not shown; moths came in very much smaller numbers, but the same trends are reflected.

Year	May		June		July		August		Total
1993	—	9	away	13	15	34	16	2	89
1992	—	14	12	away	13	42	10	1	92
1991	—	1	—	3	12	20	31	1	68
1990	1	1	2	4	7	15	16	4	50
1989	—	4	3	1	21	34	12	2	77
1988	7	1	8	13	20	43	29	2	123
1987	—	1	—	2	16	18	12	6	55
1986	—	—	1	4	5	17	9	2	38
1985	—	—	3	4	6	17	10	6	46
1984	—	—	6	5	1	11	9	6	38
1983	—	1	2	3	8	13	8	—	35
Total	**8**	**32**	**37**	**52**	**124**	**264**	**162**	**32**	**711**

There are two constraints to be observed when considering the accompanying table. There are relatively fewer favourable nights during May and early June than in late June, July and August. In north-west Kent anticyclonic conditions with cold, clear nights and north or north-easterly winds are a frequent feature of spring; additionally at this season there are more nights when the light is not operated due to unpropitious weather conditions.

The table portrays no indication of a break suggesting two generations; my figures suggest a single-brooded moth with a long emergence period, most commonly flying from early July until mid-August. However, Tutt (1902) supplies evidence of the insect being partially bivoltine in southern England, although many examples he cites refer to moths emerging in confinement. *Eupithecia intricata arceuthata* Freyer is univoltine in south-east England. It is a frequent visitor to my m.v. light, but I have never recorded a specimen in October or November. Yet bred in captivity on several occasions in a cool, unheated room, all the moths have emerged as a



Total numbers of *L. populi,* 1983-1993

second generation in October. *Calliteara pudibunda* has behaved similarly. Therefore, it is essential when considering possible second generation records to be certain that they refer to feral conditions.

Several interesting features may be observed from the figures presented, and the accompanying graph:—

(a) There are no records for September, although several refer to the last days of August — the 29th 1971, 29th 1984, and 28th 1985. The latest date given by Chalmers-Hunt (1962) is for Ham Street, 1st September 1957; by L. and K. Evans (1973) for north-east Surrey, 1st September 1969; by Tutt (1902) 31st August 1894 at Waldringfield, of which he states: ". . . the latest date I have ever seen the species at large". The two recent textbooks, Heath and Emmet (Eds) (1979) and Skinner (1984), which are out of step with earlier ones, are at variance with my findings regarding September also; upon what evidence are their claims based?

(b) The first half of May has by far the fewest records of the four month period, although it also has far more nights of unfavourable weather conditions and also more nights when the light is not in operation. Over the whole twenty-five year period in only two years were *L. populi* noted in the first half of May: seven in 1988, on the 8th (2) and 14th (5), and one specimen in 1990, on the 14th, the next one not appearing until the 30th.

(c) The next fewest numbers are recorded for the second halves of May and August, this being true of both periods, 1969-1982 and 1983-1993. Perhaps surprisingly May as a whole is far less significant than August for this

moth, which is hardly in accord with the generally accepted statement for the moth's time of appearance as May and June with a partial second generation in July and August.

(d) Here *L. populi* appears to be most common in the second half of July. In the period 1983-1993 this was so in all years but two when the first half of August recorded the most specimens, the second half of July taking second place (only marginally in 1990). The first half of August over the 1983-1993 period shows the next largest number of records, followed by the first half of July. For the earlier fourteen years the pattern is similar.

(e) There is no break in the records over the four months to separate the generations, and the moths appear identical throughout the period. However, for the earlier sequence of years there is a decline in numbers for the second half of June. This is by far the largest moth to be considered bivoltine in south-east England and its life cycle is consequently longer.

Only Tutt (1902) provides evidence concerning the life cycle of *L. populi*, although his examples require careful interpretation because of confusion as to whether the conditions were natural or artificial. Referring to southern England he states that from pairings made in late May or June, second generation moths do not emerge until the end of July, usually August, and secondly that only some of the brood, usually a small proportion, emerge in the same year. Examples are quoted, invariably with at least the larval stage in confinement, portraying an egg stage of about a week, a larval stage of five or six weeks at least, and a pupal state of three weeks, giving a total of about two months. Therefore it is evident that egg-laying by first generation moths must have ceased by the end of June, for September moths are virtually unknown.

What is the explanation for these apparently anomalous figures for the Dartford area? There are several possible hypotheses:

(a) The July/August peak is the result of a partial overlap of two broods. This theory is not tenable regarding the peak from mid-July, for a first generation pairing as late as this would produce second brood moths in September.

(b) The July-August peak reflects only attraction to light, not actual numbers flying, consequent upon differences in meteorological conditions between spring and early summer. (I take summer as commencing at the summer solstice). Or might there be a difference in this moth's behaviour between the two generations? Although this may appear very unlikely it does occur in the case of *Phragmatobia fuliginosa* L. in which the first brood is diurnal (Chalmers-Hunt 1968; West 1986).

(c) There is basically only one generation which emerges over a long period, peaking in late July and early August. In conflict with this theory is the overwhelming circumstantial evidence of a second generation in early years at least. Also second brood specimens would surely tend to appear later (in September) following the late July maximum.

(d) The textbooks are correct in postulating a bivoltine régime in southern England, but all are incorrect regarding details. The Dartford statistics suggest that the second generation is substantially larger than the first. A possible explanation for this may be that due to the overwintering pupae lying upon the soil surface or just beneath it for eight or nine months compared with only three weeks for those producing second generation moths, there is a very much higher rate of mortality among the former; there may be other contributary causes, but it seems that this is likely to be the main one. However, I am unable to reconcile the evidence that there is a much larger second generation of *L. populi* for twenty-five consecutive years at Dartford with the textbook statements that this brood is only occasional and partial, i.e. small. That this statement is included in Colin Plant's work for the London area, and for the period 1980 to 1991 in particular, is perplexing. Although the author had many of my records he did not possess those for the commoner species, including *L. populi*.

Unintentionally, this essay has posed more questions than it has answered, and these can be forthcoming only from others. I am sure that the form of bivoltinism in this moth observed at Dartford is not unique; it must be similar elsewhere in south-east England, perhaps more widely over southern Britain; doubtless too there are areas where the second generation does occur as described in many textbooks — partial, small and occasional. The approximate delineation of such areas is dependent upon the observations of many people who operate static m.v. light traps on a regular basis being made known.

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A melanic *Polia nebulosa* Hufn. (Lep.: Noctuidae) in north-west Kent

On 17th June 1993, an almost unicolorous, extremely dark grey specimen, in which the thorax was also very dark, was found at my garden m.v. light. It appears to be an undescribed form; in appearance the nearest specimens to it comprise a series of nine in the National Collection, two from Yorkshire and seven from Delamere, Cheshire, but these show traces of paler transverse lines on the forewing, and appear slightly more variegated; they too are of an unnamed form.

Chalmers-Hunt (*The Butterflies and Moths of Kent,* 1968) gives no record for the melanics in Kent; however, C. Plant (*Larger Moths of the London Area,* 1993) states that melanic specimens are rare, and quotes a record for Totteridge, Herts (Lorimer) for 1971. Kettlewell (*The Evolution of Melanism,* 1973) considering melanism in this species writes of the blackish forms *thompsoni* Arkle and *robsoni* Collins in the past tense, stating that they had been replaced by another melanic form, *bimaculosa* Esp. (syn. *plumbea* Mansbridge) which had become widespread in Britain. This perhaps suggests that the 1971 specimen mentioned above was *bimaculosa.* Compared with my Dartford specimen, this form is considerably paler, more variegated, and has a paler thorax.

It is one of the mysteries of the development of melanism in north-west Kent that species such as *P. nebulosa* and *Aethalura punctulata* D. & S. addicted to resting exposed upon tree trunks, readily visible to the human eye from a considerable distance, have not developed a dark form in this area. It is also interesting that this specimen should arrive at a time when melanism is on the decline in many species as atmospheric pollution abates.— B.K. West, 36 Briar Road, Dartford, Kent DA5 2HN.

***Catocala fraxini* L. (Lep.: Noctuidae) in Cornwall?**

Until this year (1993), the only Cornish record known to me for Clifden Nonpariel (*Catocala fraxini*) was in the garden of Kea Vicarage, where the Rev V.A. Callon found a single specimen in 1949 (*The Entomologist,* 1949, **82**: 15). Details of a second Cornish record have now been passed on to me. A single was found in the lavatory of Cot Manor (SW 366375), near St Just in west Cornwall, on the night of 14th August by the artist Kurt Jackson. Apparently, a party was in full swing, but Kurt assures me that he noticed the moth before getting into the party spirit. He is quite positive about the identification as he used to collect moths at one time. No-one in the house knew anything about the moth. I can only assume that the specimen had been bred and released nearby, unless the moth had migrated from Europe. This record may be the most westerly mainland sighting of this lovely and distinctive species.— Adrian Spalding, Tregarne, Cusgarne, Truro, Cornwall TR4 8RL.

FOODPLANTS OF THE PRIVET HAWKMOTH, *SPHINX LIGUSTRI* LINN. (LEP.: SPHINGIDAE): AN EXPERIMENTAL STUDY

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Introduction

IN AN EARLIER paper, one of us (Danahar, 1993) speculated about the reasons for an observed foodplant preference of the Privet Hawkmoth, seen in the wild. This paper describes laboratory experiments to determine the optimum foodplant for growth under controlled conditions.

Although such work can never give us a full answer as to why certain foodplants are chosed in the field, it can indicate the nutritional value of different foodplants for this species of hawkmoth, allowing for a more informed interpretation of field-based observations.

Methods

Newly-hatched larvae were individually weighed in grams to three decimal places, given sufficient foodplant and placed singly in sealed plastic pots. They were kept in a constant temperature room at 27°C (range 26-28°C). The light regime was 12 hours light : 12 hours dark. Every day or two (when the foodplant in the pots needed to be replaced) the larvae were weighed and then put into new containers and given a fresh supply of foodplant. Four foodplants were used, Ash *Fraxinus excelsior* Linn., Lilac *Syringa vulgaris* Linn. and both the Green and Golden Privet *Ligustrum ovifolium* Hassk. Twelve larvae were fed on each of these foodplants. We wanted to include Wild Privet *L. vulgare* Linn., but could not find a readily available supply of this foodplant. When the larvae stopped feeding and started to change colour and wander, they were placed in plastic pots with a layer of dry coarse sand at the bottom, in which they pupated.

Results

Only larvae that survived to pupate are included here (Lilac n = 12 [Percentage pupal survival = 100%]Ash n = 10 [83.3%] Green Privet n = 8 [66.7%] and Golden Privet n = 1 [8.3%]). Figure 1 shows changes in mean body mass of Privet Hawkmoth larvae over the 25-day growth period.

The larvae grew fast and reached their maximum weight at around twenty days (Lilac mean weight = 6.31g, S.E. ±0.31g, Ash mean weight = 4.29g, S.E. ± 0.26g, Green Privet mean weight = 3.95g, S.E. ± 0.62g and Golden Privet weight = 2.7g). They then lost a significant proportion of their body weight during pupation. This was partially because they stopped

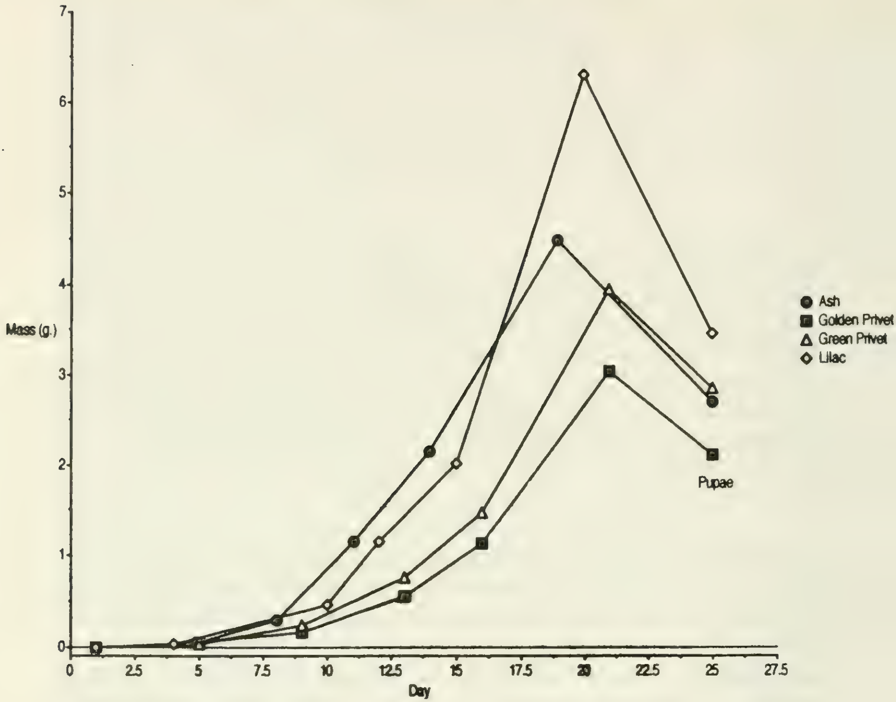

Fig. 1. Changes in mean body mass of Privet Hawkmoth larvae fed on four different foodplants.

feeding and thus their digestive tracts emptied, but also because a large amount of liquid was lost from their bodies.

The heaviest pupae produced were from those larvae which fed on Lilac, mean weight = 3.45g, S.E. ± 0.2g. This is 0.6g (17.4%) heavier than the average weight of larvae fed on Green Privet (mean weight = 2.85g, S.E. ± 0.17g), 21.7% heavier than those fed on Ash (mean weight = 2.7g, S.E. ± 0.15g) and 39.1% heavier than the sole surviving larva which fed on Golden Privet (weight = 2.1g). A one-way analysis of variance showed that there were significant differences in pupal body mass between larvae fed on the different foodplants ($F = 4.21$, $p = 0.0144$). A Scheffe F-test (multiple range test) showed that the difference between Ash and Lilac was significant ($F = 3.01$) at the 95% level.

The Green and especially Golden Privet showed poor results, despite the fact that in an attempt to use the healthiest larvae for the experiment, the larvae which fed on Green Privet were unintentionally selected to be heavier than the larvae which fed on the other foodplants. A one-way analysis of

variance of hatchling mass showed significant differences between larvae fed on these four foodplants ($F = 4.89$, $p = 0.0051$). A Scheffe F-test was carried out and the hatchling weight on Ash was significantly different from that on Green Privet ($F = 4.12$) at the 95% level and hatchling weight on Green Privet was significantly different from that on Golden Privet ($F = 3.15$) at the 95% level.

Discussion

Although Lilac was present at the Dunhams Wood site (Danahar, 1993) a search for larvae on it produced nothing, whereas large numbers of larvae were found on Ash. However, there was considerably more Ash than Lilac at this site.

The results of the present work suggest that Lilac is a nutritionally superior foodplant for the Privet Hawkmoth. The observed distribution of larvae in the field on Ash rather than Lilac, could result from preferential oviposition on Ash, or from better survival on Ash (with higher mortality on Lilac), or because Ash was more likely to be encountered by adults. A combination of these three factors could also result in the same observation. Experiments on hostplant choice by ovipositing adults might help to distinguish between these possibilities.

Lilac is not a native species in the British Isles (Clapham, Tutin and Moore, 1990) and is mostly confined to urban settings, so it may be of little importance to the ecology of the Privet Hawkmoth in its native haunts in this country. However, the Privet Hawkmoth seems to have two distinct habitat preferences. In the wild, Pittaway (1993) describes it as a species of woodland edge and open scrub. He notes that the larvae show a preference for sapling Ash or the lower growing foliage of Lilac or Privet. It could be assumed that the Privet Hawkmoth is an opportunistic species, which is quick to colonise chalk and limestone scrub where young Ash is the primary tree colonist. In this context it would be interesting to know if Wild Privet establishes as quickly as Ash. The alternative habitat preference of this Hawkmoth is the urban setting, where it feeds on Lilac, Garden Privet, *Spiraea* and *Forsythia,* to name but a few. It is commonly observed in Cambridge where the apparent preference is for *Spiraea* as opposed to Garden Privet (Northfield, personal observations). This observation is not surprising in view of the low final pupal weight and high mortality of larvae on Garden Privet, recorded in the present work. The ability of this species to utilise new foodpalnts is already documented, for example *Symphoricarpos alba* (Meerman, 1987), and it is possible that this plasticity in foodplant acceptability is what has enabled the Privet Hawkmoth to spread from downland habitats to the urban environment.

Conclusion

Under controlled conditions in the laboratory, Privet Hawkmoth larvae put on most weight when fed on Lilac. Further experiments which include Wild Privet *Ligustrum vulgare* Linn., *Spiraea* and *Forsythia,* could be enlightening.

Acknowledgements

We thank the following people for their help: Dr Mark Tester, Dr Robert Srygley, Dr Sarah Corbet, and Dr Brian McCabe.

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A further note on larval foodplants of *Pieris brassicae* L. (Lep.: Pieridae) in north-west Kent

From the note by B.K. West (*Ent. Rec.* **105**: 253-4) on this subject, in which he invites the observations of others, I was greatly surprised to learn that neither horse-radish (*Amoracia rusticana*) nor, apparently, hedge-mustard (*Sisymbrium officinale*) are listed among the known foodplants of the Large White in the standard textbooks. Like Mr West in his district, I had long been accustomed to seeing broods of *P. brassicae* larvae on the former plant, not very infrequently, here on Woolwich Common in the last few decades, taking but little notice of them as I assumed their occurrence on that host must be well known. For that reason I never even troubled to verify the point! I may say that in August last year, 1992, the butterfly was extraordinarily abundant there (and in this district generally, as also, I believe, over a far wider area); but this year, 1993, its numbers — though still quite high — were more moderate. I have not so far noticed larvae on the hoary cress (*Cardaria draba*), the only other crucifer growing freely here and there on the Common; nor on the wall-rocket (*Diplotaxis tenuifolia*), plentiful here and along the Thames, and supporting the Pyralid moth *Evergestis extimalis* (Scop.) which I see here each year. However, four or five years ago I came upon a colony of *brassicae* larvae defoliating a bushy plant of hedge-mustard at the edge of Eltham Common, a short distance to the east.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

BEETLES FROM PITFALL-TRAPPING AT HIGH ALTITUDES IN THE CAIRNGORMS

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THERE ARE many references in the literature to beetles occurring on the high plateau of the Cairngorms but few quantitive studies have been described. This paper records beetles obtained from a pitfall-trapping exercise carried out in 1987 in what was then the RSPB Upper Glen Avon Reserve, now part of the RSPB Abernethy Forest Reserve.

Trapping was carried out at three high-level sites, one on A'Choinneach and two on Ben Macdui. The surface terrain on A'Choinneach consisted of areas of coarse gravel with tufts of mat-grass (*Nardus stricta*) and three-leaved rush (*Juncus trifidus*). The two Ben Macdui sites comprised coarse gravel in which were loosely embedded variously sized stones, with sparse vegetation consisting of small patches of mosses and occasional tufts of alpine grasses and rushes between the stones.

The traps comprised slightly tapered, plastic drinking cups of about 200ml capacity, charged initially and whenever emptied with about 80ml of 10% alcohol. Those on A'Choinneach were set in a line approximately 15m in length and were emptied and recharged every four weeks. Those on Ben Macdui were positioned at each site in a circle approximately 3m in diameter and were unattended. Other site and trapping data are given in the table. RWT set and retrieved the traps on A'Choinneach and JAO dealt with those on Ben Macdui.

The species and numbers of each trapped are given in the table. The number of individuals trapped was much lower than would be expected at lower levels, ranging from about one beetle per trap per week at the summit of Ben Macdui to about twice this rate on A'Choinneach. These low catches no doubt reflect the harshness of the environment at such altitudes in Scotland. Indeed, at the time the traps were being set on Ben Macdui (13.vi.87), it was snowing quite hard and there was about an inch of snow on the ground.

The difference in the species trapped at A'Choinneach on the one hand and the two Ben Macdui sites on the other are somewhat surprising; of the overall total of 25 species trapped, only three occurred on both hills. In addition, more individual beetles were trapped on A'Choinneach. The sites on Ben Macdui were essentially flat at the highest points locally whereas the site on A'Choinneach was a little below the summit on a slight, east-facing slope. It may have been that the latter had a significantly warmer micro-climate because of this and because it was at a somewhat lower altitude than the summit of Ben Macdui. A warmer micro-climate would presumably support a richer biotope with more to eat for the predator

species which made up most of the catch. Further study of the relation between beetle population and nature of site on the Cairngorm plateau would obviously be of interest.

Four of the species trapped — *A. alpina, N. nivalis, E. whitei,* and *P. adstrictus* — are Boreo-British in distribution, that is they occur in the British Isles and Scandinavia but not in central Europe (Lindroth, 1935). The explanation for such a distribution is not clear. Lindroth considered it most likely that such species reached Britain from the north before the last phase of glaciation (Würm) and survived that glaciation period in sites which were free from ice at least annually, possibly mountain tops.

Of these four, *A. alpina* is the most noteworthy. It has been recorded in Britain with certainty from only four areas — the Garbh Meall range in Perthshire, two sites in the southern part of the Cairngorm mountains and from a cluster of sites at their northern edge. There is a published record for the island of South Rona off the Scottish west coast (Harrison, 1939) but the nature of this small island (maximum altitude 126m) in terms of habitat and climate is such as to make the record unlikely and not really acceptable without further evidence.

A. alpina is very much a cold-tolerant species and all the precise records for this species of which we are aware are for sites with altitudes of 900m or higher (except for a single specimen found under a stone by JAO at about 500m in Glen Einich in April 1953). The species (a single specimen) was first found in Britain on Garbh Meall (Blackburn, 1866) but it seems to have been found at this site only once since (Lloyd, 1895), apparently only three specimens in all. In the southern part of the Cairngorms, there are two reports from high ground in the Braemar area (Sharp, 1871; Beare, 1914) and there are two specimens in the Royal Scottish Museum labelled Blair Atholl, 1898, taken no doubt on nearby high ground (Beinn a Ghlo or Ben Dearg) but labelled with the name of the nearest town. Only in the northern edge of the Cairngorms has the species been found repeatedly and recently since it was first noted there (Champion, 1874) and there have been several records for the species there within the last few years (e.g. McLean, 1988). The absence of records for this species from three of its four sites for nearly a hundred years suggests that it may survive now in Britain only in the northern parts of the Cairngorms, possibly eliminated from other environmentally less severe sites as a long term effect of climatic warming.

N. nivalis was recognised as a British species comparatively recently (Lindroth, 1935; Blair, 1949) but it is now known from 20 - 30 hill tops in Scotland, England and Wales. The numbers trapped at the summit of Ben Macdui indicate that there it is probably the dominant carabid. At other sites where it occurs it is usually heavily outnumbered by its close relative *N. gyllenhali*.

E. whitei was first noted in Britain on Beinn a'Bhuird in the southern edge of the Cairngorms (Sharp, 1871). The species is now known from about 20 sites in Scotland and a few in northern England. Although Scottish records are mostly from high altitude sites, it has been found in

Yorkshire and in Perthshire below 800m (e.g. Morse, 1913; Harwood, 1921). Recent reports (e.g. Owen, 1988) have indicated that the species is more widespread and much less uncommon than previously thought.

Paraxodically, for a Boreo-British insect, *P. adstrictus* is not confined in Britain to high ground but is recorded from coastal sites in Scotland and northern England as well as in montane regions (Luff, 1982). Some of the other Boreo-British beetles are similarly not confined to high altitude sites (Blair, 1949).

Of the other species trapped, only *Corticaria linearis* can be considered out of place in a montane environment. This is a woodland species occurring in Upper Speyside and Deeside and was no doubt carried to the summit of Ben Macdui by air currents from a lower level. The remainder are species regularly found at the tops of Scottish hills. What is perhaps surprising is the fact that many (see table) are eurytopic — equally at home in lowland sites. This seems to be a feature of montane beetle communities. Thus, in a previous survey of beetles from hill tops in Perthshire (Owen, 1985), more than a third of the 69 species recorded are known to inhabit Richmond Park, Surrey (Hammond & Owen, in press).

Acknowledgements

Messrs D.J.M. and T.A. Owen helped in setting out and retrieving the pitfall traps on Ben Macdui and Dr M.R. Shaw very kindly provided us with information from the Scottish Insect Records Index and from specimens in the collections in the Royal Scottish Museum.

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Site data and numbers of each species trapped

	A'Choinneach	Ben Macdui North summit	Ben Macdui Summit
O.S. grid ref.	NJ035045	NN991995	NN990990
Altitude (M)	980	1100	1300
Number of traps	10	8	8
Start of trapping	1.6.87	13.6.87	13.6.87
Duration of trapping (wk)	16	8	8
Number of beetles trapped	352	65	86
Number of species trapped	18	9	11

Species	**Status***	**Number of examples trapped**		
Carabus problematicus Herbst	E	243	8	1
Nebria gyllenhali (Schoenherr)	M	—	30	4
N. nivalis (Paykull)	M	—	3	19
N. salina Fairm. & Laboul.	E	11	—	—
Patrobus assimilis Chaudoir	M	7	—	—
P. septentrionis Dejean	M	16	—	—
Pterostichus adstrictus Eschscholtz	E	2	—	—
Calathus melanocephalus (Linnaeus)	E	28	—	—
Amara alpina (Paykull)	M	1	—	—
Trichocellus cognatus (Gyllenhal)	E	2	—	2
Cymindis vaporariorum (Linnaeus)	M	2	—	—
Arpedium brachypterum (Gravenhorst)	M	3	11	29
Lesteva monticola Kiesenwetter	M	2	—	—
Geodromicus longipes (Mannerheim)	M	4	—	—
Eudectus whitei Sharp	M	—	3	16
O. boops (Gravenhorst)	E	1	—	—
O. molochinus (Gravenhorst)	E	25	—	—
Bryoporus rugipennis Pandelle	M	1	—	—
Aloconota gregaria (Erichson)	E	—	1	3
Liogluta longiuscula (Gravenhorst)	M	1	—	1
Atheta tibialis (Heer)	M	—	4	9
Byrrhus fasciatus (Forster)	E	2	3	1
Corticaria linearis (Paykull)	L	—	—	1
Otiorhynchus arcticus (Fabricius)	M	—	2	—
O. nodosus (Müller, O.F.)	M	1	—	—

*Status codes: E = eurytopic; L = lowland specie; M = montane species.

LEAF-MINERS ON *ALNUS INCANA*

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I READ with interest the note of my friend John Robbins on the leaf-miners of *Alnus incana* (*Ent. Rec.* **105**: 259-260), and am responding to his request for comments.The first is to say that I am solely responsible for the blunder in *The Moths and Butterflies of Great Britain and Ireland* (MBGBI) Vol. 2, of describing the mine of *Phyllonorycter strigulatella* (Lienig & Zeller), and also that of *P. distentella* (Zeller), as occurring on the upper side of the leaf. The text for the Lithocolletinae was written by Ian Watkinson. At quite a late stage in the course of editorial revision, I realised that he had throughout omitted to give the side of the leaf. By this time Ian had emigrated to the USA, so I added "Upperside" or "Underside" to all species after the head *Mine*. Whether it was a slip of my pen or an undetected typographical error is not important. Somehow the text passed through the hands of eight readers, including that experienced microlepidopterist the late E.C. Pelham-Clinton, without the mistake being noticed. I was fully cognisant of the facts as testified by the two editions of *The Field Guide*, published before and after MBGBI Vol. 2.

Although the information may not have been published, *Caloptilia elongella* (Linnaeus) has previously been recorded on *Alnus incana*, for example at Colwich Country Park, Nottinghamshire on 4.ix.1988 by A.S. Boot (*in litt.*), and by me near Earl's Colne, Essex, in 1989 and no doubt by other recorders.

The discrepancy between the relative sizes of *P. strigulatella* and *P. stettinensis* (Zeller) in the text and on Plate 13 of MBGBI Vol. 2 may be because Ian Watkinson chose an exceptionally large example of the former for figuring as the best-marked specimen available to him.

It is not correct to say that Kloet & Hicks (1972) gave *strigulatella* as a synonym of the present *P. rajella* (Linnaeus). It was formerly thought that Linnaeus' (1758) description of *rajella* ("*P. Tinea* alis auratis: punctis 7 argenteis: secunda tertiaque connatis. *Habitat in* Alni *foliis subcutanea*") applied to *P. strigulatella* and so as the senior name it was used for that species with *strigulatella* in synonymy. Later this was found to be a misidentification and the name was transferred to the moth that now bears it. After the change you read

strigulatella (Zeller, 1846)
rajella sensu auct. [sic]

This clearly indicates misidentification, not synonymy. The synonymy is correctly given in MBGBI Vol. 2, Emmet (1987), *etc.*

Robbins' comments on the voltinism of *P. kleemannella* (Fabricius) are of considerable interest. Contrary to his implication, all authors (Stainton, 1857; Meyrick, [1928]; Ford, 1949; Watkinson *in* Emmet, [1979], *etc.*)

described it as bivoltine prior to MBGBI Vol. 2 (1985). Then E.C. Pelham-Clinton challenged the accepted view, and since his observations corresponded with my own, I emended Watkinson's text. Voltinism may vary between years (Emmet, 1977) and between localities. Some individuals of a mainly univoltine species may emerge exceptionally early and give rise to a second brood of adults appearing contemporaneously with their univoltine cousins. Additional data to elucidate the facts would be welcome.

May I conclude with a double digression? The first is to point out that the correct abbreviation of *sensu auctorum* is *sensu auctt. Sensu auct.* represents *sensu auctoris,* in the opinion of a single author. In the abbreviation of inflected Latin words a plural is indicated by doubling the final or only, letter, as in "p." = *pagina* and "pp." = *paginae.* "*Auct.*" was an abomination introduced by the botanists. I am glad to see that the most recent Continental check list (Austrian) has accepted my spelling.

My second digression is to ask that the name *rajella* be pronounced "*rayella*", as indeed it was spelt by Hübner (1796). Linnaeus bestowed the name in honour of John Ray, arguably the greatest British naturalist. Latin has no letter "y" and Linnaeus represented both "y" and the consonantal "i" by the letter "j". Most entomologists correctly pronounce the butterfly *aglaja* to rhyme with Isaiah rather than Elijah.

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THE LIFE CYCLE OF A BUGHUNTER

(The late S.N.A. JACOBS)

Introduced by PAUL SOKOLOFF

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Introduction

STANLEY JACOBS died on 14th September 1989 at the age of 92 and a photograph and obituary were published in this journal. (*Ent. Rec.* 1990, **102**: 5-6). Jacobs was editor of the *Record* for 17 years between 1955 and 1972. A few years after his retirement from the editorial chair he wrote an autobiographical essay which he passed to the then editor, Michael Chalmers-Hunt, who in turn passed the text to me on Jacob's death. The essay was incorporated into other papers and unpublished illustrations by Jacobs, and remained in the archive.

Recently the essay was rediscovered, and is published in full below. Although undated, it was probably finished around 1980. The title is original and apart from a few annotations, only minor editorial changes have been made, the essay being substantially as written by Stanley Jacobs.

The essay

"I OWE my original interest in entomology (bug-hunting at that stage) to my mother who, before her marriage, lived at Leytonstone, and was a member of a local Epping Forest natural history society led by a Mr Hillyard. Her father, Mark Green, a Crimean veteran, who married my grandmother, one of Florence Nightingale's nurses at Scutari, followed the popular fashion of his day, and devoted a small spare room to a 'museum' including fossils, dried specimens and other natural history items bottled in spirits of wine. He worked at the P. & O. Line office in the City, where captains brought him small souvenirs of their voyages for his collection.

My father was given the fashionable education of his day, at Neunheim College, Heidelberg, and while in Germany, took an interest in the alpine butterflies, especially the Apollo group, but his luggage, including his specimens, was stolen from him on his way back to England at the end of his schooling. He did not resume collecting, but his tales of his field work certainly found a mark with my brother and me at the early age of about eight years. We both started collections, rivals at that time, with 'whites' knocked down with our hats, until our parents combined to provide us with home made nets. Our collections were housed in cardboard sweet boxes, which were available at sweet shops at one penny each, or for nothing if

your luck was in. In these we gummed small squares of cut up corks in rows to take one insect each, and later the cork was cut into strips and gummed in in continuous lines. At this stage, ordinary dressmaking pins were used for mounting.

In 1898 we had removed to Catford, where our collecting commenced about 1906. Our next door neighbour kindly introduced us to a Mr Andrews, living further up our road, who had a very fine collection of British butterflies in two forty-drawer cabinets. On two occasions I was permitted to inspect these cabinets and was indeed thrilled by them. I may say that in later years, I tried to locate this Mr Andrews who was apparently in his late twenties at the time I knew him, but without success. He was not the prominent dipterist who was well known as treasurer for *The Record*.

In those days, we had a local naturalists' shop, run by a Mr Noakes, in Brownhill Road, Catford, from whom we were able to obtain setting boards, and later on, as pocket money expanded slightly, entomological pins.

With open country nearer to home, with farm land less than a mile away, collecting was not unduly difficult: there was even a very productive 'lane' or footpath, between our back garden fences and those of the next road to us. There was also the very fine series of recreation grounds following the river Ravensbourne between Catford and Ladywell. We used to work these in small parties of school friends, the prizes being *Cerura vinula* L. and *Cossus cossus* L. larvae for the lepidopterists, and the Musk beetle *Aromia moschata* L. on the willows, for the coleopterists.

By this time, we were allowed to have cyanide bottles, made up by the chemist at one shilling a time. A summer holiday at a farm between Otford and Kemsing in Kent was most fruitful, and I was thrilled to see the number of dark green fritillaries, *Argynnis aglaja aglaja* L., flying on the slopes of the downs overlooking the old site of the West Kent Foxhounds kennels.

Another very pleasant summer holiday was when my brother and I were sent to a farm at Burnt Fen, Suffolk, which produced the gift of a hatbox full of tortoiseshells and peacocks swept from the ceiling of a dark corner of the farmhouse, yearly, though they produced no varieties.

Based on gifts from our grandfather's museum, we started our own, and while my brother looked after the other subjects, I was made curator of the entomological side, which had now graduated to storeboxes.

We started the habit of an early morning visit to the swimming baths at Ladywell, rising at 6am and running the mile through the recreation grounds and back home for breakfast and school. In the season, we were accustomed to seeing daily anything up to twenty pairs of Poplar Hawks (*Laothoe populi* L.) *in cop.* on the trunks of the young poplar trees.

In June 1914 I left school at St Dunstan's College, Catford, and started life as an engineer apprentice with Messrs Vickers Ltd. at Erith, Kent.

There, I came in contact with a dwarf labourer known to everyone as 'Toby' (I never knew his real name) who showed me a great deal of bug-hunting methods and how to find moths under the works' lights first thing in the morning, all of which helped my collection to expand slowly. Another bug-hunter at the works was a Mr Hayward, who invited me to his home to see an almost completed 'butterfly picture' some three feet by four feet filled with patterns of massed set butterflies including Clouded Yellows and Pale Clouded Yellows (*Colias croceus* Fourch. and *C. hyale* L.) about one hundred of each at least. The collecting and setting of all these insects must have entailed a greal deal of work (the setting was good) but to what end?

Then came the 1914-1918 war, and I joined up with the 20th London R.W.K. Territorials. Later I was commissioned to the 11th Royal Fusiliers in Kitchener's first hundred thousand, but I was too young for a commission and resigned, re-enlisting with the 16th Middlesex Regiment (Public Schools Batallion), and with them served two and a half years in France, transferring to the Field Survey Company, Royal Engineers in early 1918, when I saw many Commas and Large Tortoiseshells flying about my observation post in the Bois de Frières. I was invalided home in March 1918 with a slight dose of mustard gas, which more or less closed my eyes, and went to the R.E. Command Depot at Thetford, Norfolk. Here I was much impressed by the large numbers of the little Tortricid moth *Epinotia tedella* Clerck, flying over the trimmed spruce hedges of the district. While watching them, I was accosted by another R.E. who said that his father made storeboxes for the trade, and offered to get me a pocket box. This evenually came to hand and is still in my possession. In September I returned to France and was drafted to the Overseas Branch of the Ordnance Survey at Wimereux, and was there when the armistice was signed.

My mother had promised to buy me a motor cycle on my return from the war, but we both agreed that a good cabinet would be less dangerous and would certainly last longer, and she bought me a drawer Crockett cabinet from Mr F. Primrose Stevenson, which included a pair of *Lycaena dispar dispar* Hayworth, amongst other things.

On demobilisation, I was fortunate enough to be granted a two years' course in agriculture with an annual allowance, and was posted to Ditchling Court Farm, Sussex. Here, I very soon met the local builder, Fred. F. Wood, a very keen amateur naturalist beside being knowledgeable on many other aspects of country life. Our friendship lasted until his death in 1941. He made a very good collection of macrolepidoptera, and was in touch with Mr Bramwell of Brighton, whom I never met, but who introduced Wood, under strict secrecy, to Loughton Woods, the habitat of the Lewes Wave, *Scopula immorata* L., of which Wood gave me a cluster of eggs later on. I moved on to High House Farm, Chailey, where I was able to collect many species, including many micros. Sallow was particularly productive

in that year and I was able to take all the *Orthosia* species and many other seasonal species. After this, I went on to Henley-on-Thames for experience in poultry farming, where I was able to collect many more species both macro and micro.

My training finished with a fortnight's course under Professor Somerville at Oxford, based on Wadham College. Here, at the Oxford Museum, I met Professor Poulton, and I gave him the *immorata* larvae which I had brought with me to rear. He suggested that my parents might have me trained for professional entomology, but this was not possible, and I took a post as manager for a new poultry farm at Twyford, Berkshire.

This farm failed to develop, and I decided to go to Canada on an assisted trip in reply to a call for volunteers to help get in the harvest. There, my time was very fully occupied with the exception of Sundays, when I was able to do a small amount of collecting and observation. I made a net from a sugar bag, and took two specimens of what I took to be *Agraulis vanillae nigrior* and a few Plusiids, and one Phycetine species, all of which I handed to Mr Riley at the Museum. The *vanillae* was a very far north record if the determination was correct.

When threshing, I was struck by the numbers of *Nymphalis antiopa* L. aestivating in the grain stooks: while waiting at Halifax, Nova Scotia for my vessel home in December, I saw *antiopa* flying over the snow.

I had become most unsettled since the war, and seemed unable to settle down to any occupation, and went back to work on the Henley farm where I did part of my course. On a weekend visit home, I was accosted on London Bridge station by Mr S. Abbot who had spotted my net stick and Y tied on top of my suitcase, and he persuaded me to join the South London Entomological and Natural History Society (in 1923), which met at the Provision Exchange in Hibernia House, London Bridge.

At last I decided to take the sensible step of accepting a clerical post in my father's shipbroking and chartering business, and slowly started to become a more civilised being. Working in the City made it easy to attend the South London meetings, where I was fortunate enough to come into contact with many of the leading members, including Henry J. Turner, the Secretary, Robert Adkin, N.D. Riley, L.T. Ford, Guy Adkin, Dr Cockayne, K.G. Blair, R.E.E. Frampton and T.H.L. Grosvenor, to name a few, all of whom were most friendly and helpful. At one meeting, my description of the changing from winter case to spring case of *Coleophora fuscedinella* Zeller, won the heart of H.J. Turner, who later on presented me with his extensive *Coleophora* collection in two storeboxes.

Later I became secretary of the Society, but found that the calls of my business life prevented the efficient performance of my secretarial duties, and it was suggested that I resign and hand over my duties to Mr F. Stanley Smith, who had kindly volunteered to relieve me. Later, I served as President in the years 1954 and 1964.

After my marriage, my wife who, although being a country-lover, was not an entomologist, attended field meetings with me. As time went on, however, I realised that this was for my sake, and that standing or sitting by while I worked a small area must be boring in the extreme to a keen walker who was not an entomologist. I let the priorities take their correct order, and cut down my attendances at field meetings, replacing them with country rounds together, confining my collecting to our walks unless I struck something worthy of closer attention. This worked out very well and was treated with a broad mind by my wife, so that, without any feeling of guilt, I was still able to go off on any extra special meetings which might be arranged.

The Society's field meetings were a source of great pleasure and interest, and I was able to link up with Stanley Wakely, who joined the Society a few years later, on account of our common interest in the micros; other micro men in the Society were more advanced. L.T. Ford took us both under his wing, and was most generous with his beautifully-set duplicates. Wakely's ability as a field worker soon made itself felt, and he was marked out as one of the field workers of the future. Beside micros, he maintained an active interest in the macros and dabbled in the other orders with a liking for the Coleoptera and Diptera.

Prior to my taking the City job, during a visit to South Kensington, I asked John Durrant whether I could get a job at the Museum. He replied that I could start in the setting rooms, but added the warning that I would stick there, finishing with the words 'If you have plenty of money, go in for science. If not, open a pub!'.

My visits to the Museum became more frequent, and I was greatly helped by John Durrand, H. Stringer and W.H.T. Tams with the determination of my catches, which included a Tineid which Stringer considered to be a new species of a new genus and sent it to Edward Meyrick, who named it *Metarsiora horrealis,* but which was eventually relegated to a variant of *Ateliotum insularis* Rebel. This specimen I found on a bag of Brazil nuts in one of the warehouses in the Eastcheap district of the City. I was well received by the dried fruit merchants who had their showrooms in that district and I was able to collect many Phycetinae and Galleriinae including *Ephestia* spp., and *Ectomyelois ceratoneae* Zeller and its variety *phoenecis* Durrant. Of the Galleriids I found *Corcyra cephalonica* Stt. after finding a solitary male out of doors in Fen Court. I found *Paralipsa gularis* Zeller in quantity in one warehouse, and was able to introduce Ford and Frampton to the insect *in situ.*

Through H.J. Turner, I was put in touch with William Fassnidge who, in turn, put me in touch with Leon Lhomme, both of whom steered me into the way of continental species. Another much valued friendship came to me in A.B. Klots, via Dr Cockayne, Joseph Klimesch via the British Museum and A.G. Carolsfield-Krause via Klimesch. 'C-K', as he came to

be known to me, was very closely attached to the Neputiculidae, and took over this family from the much overloaded Klimesch, for *Microlepidoptera Palaearctica,* and with the help of all these, the foundations of my general collection were laid down before the 1939-45 war. This separated me from Klimesch, although, before the outbreak of hostilities we were able to wish each other safe survival, and express the hope of a glad reunion at the end of the war.

Klots was also more or less out of touch, although we received many food parcels from America, which were most welcome. Fassnidge, a modern language master at the Henry I School at Southampton, was evacuated, with his school, to Poole, Dorset, from whence he sent me mines of *Stigmella suberivora* Stt. As an officer in the Home Guard, he attended a demonstration of shooting up a column in convoy by a spitfire plane on Salisbury Plain, but unfortunately, the pilot mistook the spectators for the column, and Fassnidge received two bullets, one in a lung and the other in his left shoulder. These incapacitated him for some time, but his iron will took him out collecting with me in the New Forest after the war, under the watchful eyee of Mrs Fassnidge, who kept him on a short lead to see that he did not over-exert himself. His wounds eventually proved fatal after some three years of devoted care from his wife, and I was glad to have been able to assist her in her appeal for a war widow's pension, which had been refused, but which was finally granted. Through Fassnidge, I met Scarsdale Brown on an expedition to the Winchester district in search of *Myelois cirrigerella* (Zincken).

After Fassnidge's death, I purchased his microlepidoptera collection, while his macro collection went to the Natural History Museum. I was also given some rare and useful books from his library, and bought others. His copy of von Kennel's *Palaearctische Tortriciden* went to Mr Curtis of Bournemouth.

When Europe was once more opened up to travel, I arranged to meet Lhomme, who arranged quarters for us at Cabrerets, but unfortunately he fell through the roof of an outbuilding at his home, and died from his injuries. We called at le Carriol, his home, to pay our respects to his widow. Lhomme and I had carried on a close correspondence, and I subscribed to his *l'Amateur de Papillons.* He put me in touch with Paul Bédé of Sfax, Tunisia, from whom I received large numbers of micros from that district. My subscription to *l'Amateur* put me in touch with S. le Marchand, who took over the editorship after Lhomme, and his paper on the European Lithocolletidae (*l'Amateur de Papillons* **VIII**: 83-118) inspired me to make a translation of this paper, and produce a similar paper on the British species of Lithocolletidae, with a coloured plate (*Proc. South London Ent. & N.H.S.,* **1944-45**: 32-59).

Another pre-war friend was Josef Soffner, and while after the was I was able to visit C-K, I was not able to meet Soffner, though we corresponded,

and I made an unsuccessful attempt to save his collection for him. I understand that this went to the Prague Museum. C-K introduced me to a young Czechoslovak named Dalibor Povolny, later to become a leading Czechoslovak and world entomologist with a leaning towards the Gelechiidae.

On a visit to Digne, in the days of its entomological glory, I was fortunate enough to meet Dr Eduard Diehl while out collecting. We started a correspondence, and when he took on a four-year contract for a medical practice in Madagascar, he was only interested in the Macros, and sent me all the Micros which came to his traps. Pierre Viette, whom I had met in Paris, took a keen interest in these catches, for he was deep into a study of the Madagascan Lepiodoptera fauna. He found four or five new species, the types of which are in the Paris Museum, and I was able to pass the remainder of the material into the British Museum (Natural History).

Another German entomologist with whom I corresponded, and who I was able later to visit when on a holiday at Seefeld, was Osthelder, who unfortunately died a few years later.

Coming back to the home front, the field meetings organised by the South London Society were most interesting and productive, for these were the years of plenty. One of the leading organisers was Mr C.E. Liles, who always found room in his haversack for a bottle of Hock for use with his lunch. T.R. Eagles was mainly interested in Lepidopterous larvae, although he was also a keen botanist. Occasionally these meetings were attended by Col. Labouchere, who was in part instrumental in the introduction of Dutch *Lycaena dispar batavus* Oberthür to Wood Walton Fen in an attempt to compensate for the loss of *dispar dispar* Haworth.

After the first year of the 1939-45 war, not much field work was possible, although I remember an enjoyable visit to Dungeness area with R.L.E. Ford to collect *Coleophora otitae* Zeller on the sea campion, he having a pass for the area which was heavily fortified. In 1941, my house was severely blasted by a 500kg bomb with a graze fuse, which exploded on the opposite side of the road. Although practically all the windows were shattered, my collection sustained minimal damage, for while the blast forced my cabinet doors open and shot the drawers about half way out, the damage was in boxes of duplicates which were placed on a shelf vertically. I am told that the experience of the Natural History Museum was similar when blasted by a V1 weapon which exploded on the French college on the other side of Cromwell Road. What a 500kg bomb failed to do was done most efficiently by *Anthrenus verbasci* L., for although my tiles were promptly replaced, it took more time to get my broken ceilings repaired, and these abominable pests dropped through from the sparrows' nests in the roof, at a period when war duties took so much of my time that I was not able to be as watchful as I should have been. Unfortunately my micros suffered most, the larvae being able to step from pin to pin and clean off a

series. I often wondered who had taught them entomology, for they seemed to have a preference for the "good things."

My general collection was becoming somewhat crowded after the war, and Dick Ford sold me a 100-drawer continental cabinet which he had received with the Bainbridge Fletcher collection. This was a table with five tiers of ten drawers on either side; far too big for an ordinary house, but I ripped up the carcass and re-asssembled it in four tiers of twenty-five drawers each, which fitted well to one of my bug-room walls, and served for the layout of the general collection.

In his late years, H.J. Turner gave me Tortricina and his Tineina to S. Wakely. After his death, Turner's son invited me to take what material I required from the remainder of the collection and also what books I required before he invited E.E. Syms, the South London Librarian to take what the Society required. This put me in a somwhat awkward position, but I confined my choice to such books as I knew to be in the Society's library. One interesting book which I selected was Col. Swinhoe's *Butterflies and Moths of India,* which had been Col. Elwes' spare copy and contained voluminous manuscript notes. This I handed to W.H.T. Tams for the department's library at the British Museum.

An item which was useful to me was three papers, bound together, on the Pyralidae and Pyraustinae by Sir George F. Hampson, which enabled me to set out those families in the 100 drawers, arranging the Phycitinae to Crambinae based on Staudinger.

Some years ago, in 1948, Turner had put me on the editorial panel of the *Entomologist's Record,* and on his death, when the magazine had shrunk to a few pages and looked likely to fade out altogether, P.B.M. Allan gathered the panel to a meeting in London, and it was decided that we should do our best to resuscitate the magazine under his supervision, edited by Dr Cockayne. This went well for a few years, but Cockayne resigned early in 1955 after a disagreement, and Allan continued on his own, but asked me to take over the editorship. Eventually I agreed — with some misgivings — having my inexperience in mind. Allan, however, proved to be a very knowledgeable and kindly schoolmaster, and after a few years with his help, I found myself able to edit, at any rate without incurring much wrath from others. My initial term as editor was greatly helped by the formation of a 'Board of Governors' for the *Record.* [The document forming the Board of Governors is reproduced overleaf. We are pleased to acknowledge that Mr A.A. Allen has maintained his involvement in the *Record* to the present day.— Ed.]. I retired from my City business in 1962 and was able to give more time to the *Record,* and with the help of many good contributors, was able to bring the magazine to its present standard.

After seventeen years I handed the editing over to Michael Chalmers-Hunt [in 1972], so that I could help him find his feet as Allan had done for me, although C-H was not as ignorant of publication as I was when I

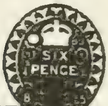
started. Before leaving the *Record,* I would like to say that Turner's failing eyesight handicapped him very badly. His ambition was to complete his writing-up of the *Varieties of the British Noctuidae* as a supplement to the *Record.* This list was started by Tutt, and Turner's idea was to let the *Record* die on its completion. [Turner, himself, died in 1951 before completing his 'Varieties' project. Although he had edited the *Record* since 1911, after the death of J.W. Tutt, no obituary to him was ever published in the *Record.— Ed.*].

His material went to the printers, Messrs T. Buncle of Arbroath, on half sheets of foolscap, about five lines to a sheet often 'running up-hill', and Messrs Buncle are worthy of the highest praise for their handling of this material. It was indeed, with a heavy heart that after the 'three-day week' in 1974 had hopelessly disorganised them so that they were no longer able to produce the magazine, that I was compelled to employ another printer.

At the end of the Blitz period, I was stood down from full time duty with the Metropolitan Special Constabulary, and applied, on recommendation by R.L.E. Ford, for a post with the Ministry of Food Infestation Division, and served for about two years as an inspector under Dr Stephen Corbet. Here I was able to make a very reasonable collection of infesting insects and other arthropods, mainly Lepidoptera and Coleoptera, for the Department, and for myself, the determinations were made or verified by Dr (later Prof.) H.E. Hinton who had an office at the British Museum. After taking what was required for my collection from the Lepidoptera, I handed the remainder of the insects which I had collected, to the South London Society. My material went to the British Museum later with my collections.

In the war years, the South London commenced to publish papers on the Tineina, and started with a paper on the genus *Mompha* by S. Wakely. Papers followed by L.T. Ford, S.C.S. Brown, J. Heath and myself, with coloured plates drawn by Col. Fraser, D.C. Twinn and myself. These plates were produced through the generosity of the Royal Society grant, but unfortunately, following a change of Royal Society Treasurer, the South London was informed that the R.S. grant must not be used for colour work. This brought the project to a close, but about 500 copies of each plate had been ordered for use with the projected volume when completed, and these were retained in store until 1978, when it was decided to publish the material being brought up-to-date by the Rev. David Agassiz. The rapid sale of this collation showed the Council's decision to have been a good one.

Through an exchange notice, I was fortunate in contacting William Mansbridge of Liverpool, who was most generous in sending me specimens of many of the rare Tortricids in which he specialised, and also Dr Neville Birkett of Kendal who supplied much interesting material for the *Record* as a member of its editorial panel.



A MEETING of gentlemen, friends of the science of Entomology, was held in the rooms of the Royal Society at Burlington House, Piccadilly, London, at half-past two of the afternoon of 29th October 1955, at which the following were present:-

S.N.A.Jacobs, A.C.R.Redgrave, A.A.Allen, L.Parmenter, H.Symes, J.O.T.Howard, F.W.Byers, P.B.M.Allan and Col. W. Bowater.

By unanimous request Mr.S.N.A.Jacobs took the chair.

It was RESOLVED that in view of certain difficulties which have lately beset the production of the monthly magazine called THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION, founded for the good of the science of Entomology by James William Tutt on 15th April 1890, a BOARD OF GOVERNORS shall be formed with power to control the editing, production, printing, publishing and finance of the magazine.

It was further RESOLVED that the Board of Governors shall consist of six members~~, of whom not more than four shall be lepidopterists;~~ That appointments to the Board, as vacancies occur, shall be made by consensus of the then existing Board; and That the Board shall meet as and when a majority of its members shall consider advisable, fourteen days' notice being given in writing by the Secretary of the Board to each member of the Board.

It was also RESOLVED that in addition to the general powers of the Board to control the editing, production, publishing, printing and finance of the magazine, all appointments to the Editorial Chair of the magazine shall be vested in the Board and the Board shall likewise appoint the Treasurer and Production and Publicity Managers. and to co-opt as they may consider desirable.

Furthermore it was RESOLVED That the appointments of Editor, Treasurer, Production and Publicity Managers made by the Board shall in the first instance be for a term of THREE YEARS and may be renewed for a similar or shorter term if the Board considers advisable.

It was also RESOLVED That the Board of Governors shall consist of the following gentlemen:-

Mr.S.N.A.Jacobs
Mr.A.C.R.Redgrave
Mr.H.Symes
Mr.A.A.Allen
Mr L.Parmenter
Mr.J.O.T.Howard

These Resolutions being agreed by all present <u>nemine contradicente</u>, we the undersigned have hereto set our names in the presence of one another:-

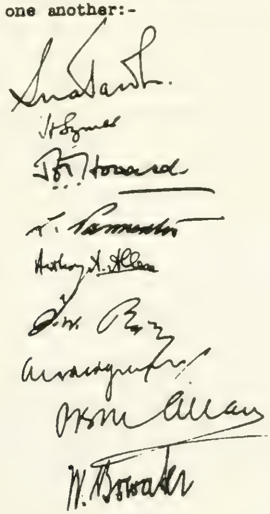


Fig. 1. Document creating the Board of Governors.

After the war years, I turned more attention to the Nepticulidae, and with the help of Klimesch, C-K and later Col. A.M. Emmet, I found myself with a large collection of mines and many imagines. The mines formed the subject of a series of drawings, and although many of them are unnamed, they are catalogued with data, and I am hoping that Col. Emmet may be able to find some time to assist in naming those which C-K had not seen.

On my retirement from the City, I commenced working on one day each week at the British Museum on a voluntary basis, and the first task given to me was to incorporate the Aegeriidae of the Rothschild collection with the British Museum collection. In this operation, Pierre Viette very kindly supplied a series of photographs and notes by Chretien on the species seen by him when he inspected the British Museum collection. When this task was completed, I was given a similar task with the Phycitinae, and set the collection out in some 125 standard drawers, with several drawers of duplicate and unnamed species. After this, I was asked to attempt the cleaning up of the Pyralids of the Swinhoe collection, which had been badly boxed, and during their storage had become covered with a black sooty dust. A medium/small sable watercolour brush proved to be the best tool for this task, and after a short while, the introduction of a short piece of a continental setting board for supporting the wings for brushing, greatly lessened the risk of damage.

A very interesting task followed in the staging up and labelling of the smaller Lepidoptera collected by the Vane-Wright South Western Africa expedition, which contained many species which were probably new to science. After this, I was entrusted with a similar task with the 'small fry' taken by the Royal Geographical Society's Sarawak expedition, and although illness has prevented me from completing the whole operation, I am hoping that the coming of better weather will enable me to resume operations with the few remaining boxes. This was a particular pleasure, because, when viewing the television film of the expedition in operation, I had said to myself: 'How I would like to have the handling of the 'small fry'at the B.M.!'

Unfortunately, it has proved too difficult a task to treat the subject with even reasonably chronological order, but it is to be hoped that omissions may be few.

The degree of friendship and good will which I have experienced throughout, from my early days of possibly overbearing know-all-ship to my, I hope, more reasonable outlook on my entomological abilities, must be in very sharp contrast with the notorious hostilities which existed between some of the entomologists of the nineteenth century whose opinions did not coincide.

The task of transferring my collections to the British Museum took some considerable time. I commenced with my general collection, retaining my British collection for reference purposes, followed up a few years later with

my British material, and I am pleased to say that the parting was not so tragic as I would have expected. With advancing years, it would have been something of a strain to have maintained the defence of the 180 drawers from the attacks of *Anthrenus* and other pests.

In 1973, I was delighted to receive from the Director of the British Museum (Natural History), a letter advising me that the Council had offered me an appointment as an Honorary Associate of the Museum, and on my acceptance of this honour, I was invited to meet the Director and Governors of the Museum at a buffet lunch. At this lunch, I was introduced to the Governors by the Keeper of Entomology, Dr Paul Freeman.

This would seem to see me into my final instar, but I trust that this will endure for some time yet, in order that I may have time to complete my pupation without undue regrets for work unfinished."

Hazards of butterfly collecting — Egg-curry orchha
India, 1985

An interesting thing happens in northern India in winter. A number of Palaearctic butterfly species, normally only found above 1500 metres in the Himalayas, breed in large numbers on the plains, among them *Pieris brassicae, Artogeia rapae, Pontia daplidice,* two species of *Colias, Argyreus hyperbius,* and several others. These are normally hibernating species, but they seem to have evolved the alternative strategy of moving down the mountains to have several broods on the plains between autumn and spring. Most of these species breed on weeds in irrigated fields, so possibly this is a relatively recent phenomonon (for more details see my paper: 1986. *Atalanta,* **16**: 245-252).

Having already investigated the foothills of the Himalayas, I decided to take my girl-friend to see the wonderful temples at Khajurao, thus allowing me to check how far into central India these seasonal wanderers might extend. The best piece of luck I had was just south of Agra, where in the bandit-infested (yet another example of the wonderful Indian way with words) ravines of the Chambal River, *Argyreus hyperbius* was more common than I have ever seen it in the mountains. Thousands were about, but no violets, the normal foodplant. We made a longer stop on the way back, but to my great chagrin, we could find no larvae.

Before we left, a friend had advised us to stop at Orchha, and "do ask for room number one — the view from the toilet is magnificent". Orchha is almost unknown, and well off the normal tourist trails, so we went. And what splendid advice! It is an enchanting place. Two huge, empty palaces, one said to have been built in anticipation of a visit by Shah Jehan that never materialised, and subsequently never used. As in so many places in India, monumental tombs had been built. A river babbled by, unfortunately attracting only the most banal of butterflies.

Palace at Orchha.

We were the only foreigners for miles. This was a good thing, because the Madhya Pradesh Government Guest House had only three rooms, and we were able to get number one. It was on the fourth floor of what had been the harem. A huge room was outfitted with bric-à-brac confiscated from a neighbouring Maharajah palace, complete with huge Belgian mirrors on the walls, four-poster bed, stuffed tigers and enough weapons to fight a minor civil war. But, as our friend had said, the bathroom was the crowning glory. It was in a narrow turret with a view covering 270 degrees, including one of those sunsets which make winter in northern India more bearable than it would otherwise be. And all this for $15 a night for a double room.

Would we like dinner? Most emphatically, yes!

Unfortunately it had to be vegetarian, said a hand-wringing manager. That, however, is hardly a hardship in India, while meat dishes are, since local meat is normally tough as old boots. A table in the little courtyard adjoining the room was impeccably set on a gleaming white tablecloth. Half an hour later, the meal arrived. Dal, yoghurt with chopped cucumber, assorted chutneys, the fluffiest of basmati rice, chappaties, popadums, and, the crowning glory, a most wonderful egg-curry. Such a meal in such a setting will be forever remembered, simple though it was. We had egg-curry the next two days as well, despite the manager's half-hearted attempts at rustling up a chicken.

We had a chat with the manager. We have seen our share of completely hopeless State Government Rest Houses, so how could he be doing so well in what had to be a remote "punishment-posting"? Well, we probably did not put the question exactly like that, but basically it seems he was simply too effective, and too demanding, and setting too good standards for the system to bear. So he was "punishment-posted". But there was hope. Someone in Bhopal seemed to be listening. He had been promised he could open two more rooms next year. The wheels of Indian bureaucracy turn in inscrutable ways.

As we left, we asked to see the *khansamah* (cook), to thank him and to give him the generous tip he richly deserved. There he was, on the floor, under an ancient open-air staircase, with a blackened petroleum cooker of the freestanding *Primus* variety, and a few battered pots and pans. I doubt if I could have made a *cuppa-soup* on his equipment. If only India could release this type of initiative and ingenuity in more productive ways.

Boiled eggs travel well, even in the tropics, and *Egg-curry Orchha* is now standard camping fare for us in Botswana. I cannot say that I reach the standards of that *khansamah,* but the curry *is* good and the rice *is* basmati. However, there is no way I could manage chapatties and popadums as well.— TORBEN B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

***Eupithecia icterata* Vill. (Lep.: Geometridae): larval foodplants.**

This moth, including a substantial proportion of females, has attended my garden m.v. light each year in numbers suggesting that there might be an alternative larval foodplant in the vicinity to yarrow (*Achillea millefolia*) which is very little in evidence. On 3rd October 1993 I decided to remove a number of plants of a cultivar of feverfew (*Tanecetum parthenium*) possessing loose corymbs of small, white button-like flowers, which has been a feature of my garden for at least two decades. I had successfully utilised this plant for feeding *E. icterata* larvae; yarrow deteriorates rapidly in plastic containers. The plants were shaken over a plastic sheet, and some half dozen *E. icterata* larvae tumbled out, all nearly full grown. E. Philip (*Atlas of the Kent Flora,* 1982) states that feverfew is a "frequent plant about built up areas, and appears to be on the increase". Doubtless, this plant, including its ornamental cultivars, has long been overlooked as a natural larval foodplant of *E. icterata* which has aided the moth's colonisation of urban areas.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

***Dicycla oo* (L.) the Heart Moth (Lep.: Noctuidae), at Windsor in the 1940s**

The recent records of this now scarce species in Berkshire (*Ent. Rec.* **105**: 250) remind me that perhaps I should place on record the finding many years ago of two specimens of *D. oo* at Windsor, in case it is of interest to

the compiler of the Lepidoptera list for that county. As I was paying but little attention to moths at the time, I unfortunately omitted to put data on the specimens, not thinking them likely to be of note in an area so full of oaks as Windsor Forest; and can only place the year of capture as being in the first half of the decade — my visits there being frequent.

Possibly at that period the species was not uncommon there, but the two specimens (pinned and put aside with other "odds and ends", and passed later to my friend Dudley Collins) remain the only ones I have met with. Both were at rest on oak trunks in the eastern end of the Great Park one day in June or July.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Odontoptera bidentata Cl. (Lep.: Geometridae): larval foodplant in Ireland.

On 29th June 1987 I found a considerable number of these larvae on bilberry (*Vaccinium myrtillus*) in deciduous woodland at Pontoon, Co. Mayo. Although I was familiar with *O. bidentata* larvae from the privet hedges (*Ligustrum ovalifolium*) in north-west Kent, a plant not, incidentally, listed by J.M. Chalmers-Hunt (*Butterflies and Moths of Kent,* 1981), these Irish insects were quite unrecognisable, being most variegated and colourful to resemble the abundant lichens, whereas those of north-west Kent are sombre hued. Several were reared to produce moths the following year. Searching and beating birch, oak and sallow especially, in the vicinity, provided no *O. bidentata* larvae. I concluded that bilberry must be the overwhelmingly preferred larval foodplant in that woodland.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Ennomos alniaria L. (Lep.: Geometridae): abs. _destrigaria_ Cockayne and _concolor_ Lempke in Kent

On 21st August 1990 my garden trap revealed a very pale male *E. alniaria* with the transverse lines and discal marks barely visible and the minute greyish striations absent. Fortunately it was later examined more closely and found to be a perfect specimen, for at first sight it had appeared very worn; indeed, as an excellent mimic of a very worn *alniaria* it could be easily overlooked. It was identified as ab. *destrigaria,* being described and figured in the *Entomologist's Monthly Magazine* for 1948 from a specimen bred ab. *ovo* in Sussex in 1908, and this remains the only specimen in the National Collection today.

The National Collection contains only two specimens, both females, of ab. *concolor,* in which the canary coloration of the thorax is replaced by the orange-brown of the wings. Chalmers-Hunt (*Butterflies and Moths of Kent,* 1981) notes only one specimen for the county, a male at Dover, 1975. To this I can add two specimens, both males, which appeared at my garden

trap on 30th August 1985 and 9th August 1992. This form also may not be as rare as appears, for it could easily be overlooked.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Satyrium w-album (Knock) (Lep.: Lycaenidae) in a moth trap

With reference to the above note by Steve Kett in the November/December issue of the *Ent. Rec.* (1993, **105**: 282), it is possible to add a similar capture at a m.v. light in Stoke Woods, near Exeter, in 1977 (Bristow, Mitchell and Bolton, 1993). With regard to the flying period of the White-letter Hairstreak in Devon, the earliest date that we have is 27th June 1976.

References: Bristow, C.R., Mitchell, S.H. and Bolton, D.E., 1993. *Devon Butterflies*, Tiverton: Devon Books.— ROGER BRISTOW, Davidsland, Brendon Hill, Copplestone, Devon EX17 5NX.

Pieris brassicae L. (Lep.: Pieridae) larval foodplants

In response to B.K. West's article in the November/December issue of the *Ent. Rec.* (1993, **105**: 253) I would like to point out that in Devon, in addition to the usual brassicas, larvae of the Large White have been found on Nasturtium (*Tropaeolum majus*), Watercress (*Nasturtium officinale*), Black Mustard (*Brassica nigra*), Wild Cabbage (*Brassica oleracea*), Hedge Mustard (*Sisymbrium officinale*), Sea Radish (*Raphanus raphanistrum*) and Horse Radish (*Amoracia rusticana*) (Bristow, Mitchell and Bolton, 1993).

References: Bristow, C.R., Mitchell, S.H. and Bolton, D.E. 1993. *Devon Butterflies*. Tiverton: Devon Books.— ROGER BRISTOW, Davidsland, Brendon Hill, Copplestone, Devon EX17 5NX.

The Goat Moth (_Cossus cossus_ L.) (Lep.: Cossidae) to light

On the 11th July 1992, one of my son's friends brought to me a live male Goat Moth that he had found at rest on the wall of his home, close to an external light that had been left on all night.Two days later my son brought home from the same garden two empty cases found on the surface of a vegetable plot. I could not be certain but from their large size and general shape I suspected that they were of the Goat Moth.

The garden occupies a very interesting position, situated as it is on the Ouse Washes SSSI. On one side of the rectangular plot is the tidal Hundred Foot River, on another is a row of some fifteen large willows (*Salix fragilis*) with their roots submerged in a permanent pond, and on the third side is a dyke lined with low, scrubby willows and sallows. Most of the garden is lawn but there are several fruit trees, two flower beds and a permanent, well-manured vegetable plot.

On my first visit I found exit holes and borings in one of the large willows and several of the scrub willows. The owners were very positive about the presence of the species and told me that in the autumn they often find large

larvae wandering around the garden and even entering the conservatory. A photograph confirmed that these had been of the Goat Moth.

On the 14th February 1993, the owner brought me a large larva that he had dug up from the vegetable plot. The larva re-buried immediately and produced a female on the 30th June. Another larva that had been retained by the owner produced a male three days later.

Paul Waring visited the site on 9th July 1993. Photographs were taken, copious notes made and larvae were collected from the small willows. He was also kind enough to leave a Robinson trap at the site for two weeks, enabling me to put to the test the species' apparent lack of interest in light.

Trapping began on 10th July 1993 and continued until the 26th apart from two night of heavy and continuous rain. The trap was checked before 7.00am each day, and the surrounding herbage and tree trunks were also examined. The time was divided equally between a point close to the large willows and a point close to the small, bushy willows.

A total of 98 species of macro moth was recorded during this period of trapping, including a number that I had not noted in my garden, less than half-a-mile away. On 18th July, the lady of the house, visiting the trap before me as she often did, discovered a worn female Goat Moth at rest on the lawn, about four feet from the trap which was positioned close to the scrub. This was the only evidence from the light that the species was present.

This result appears to confirm the comments made in recent literature about the Goat Moth's habits concerning light; Bernard Skinner (*Colour Identification Guide to Moths of the British Isles,* Viking 1984) says "occasionally attracted to light", while Emmet and Heath (*The Moths and Butterflies of Great Britain and Ireland* **2**: 73. Harley 1989) say "in very small numbers at light".

However, the flight period is June and July, and the emergence dates given earlier suggest that the spell of trapping may have begun too late for many individuals. Also, I was unable to remain with the light for long after dark and it may be that in the small hours the moth visits the lighted area without entering the trap.

Thanks are due to the owners of the site — their enthusiastic assistance went far beyond the call of duty — and to Paul Waring for the loan of the equipment.— R. PARTRIDGE, 11 New Road, Mepal, Ely, Cambridgeshire CB6 2AP.

Some additional host plants of British *Ceutorhynchus* spp. (Col.: Curculionidae)

To the list of host plants given by Prof M.G. Morris (1991: 262) for the above weevils in his valuable paper of the classification of the British Ceutorhynchinae, I can add some others from my own collecting experience. An asterisk indicates that only one specimen was on one

occasion found on (or swept from) the plant in question, so it is possible that some such instances were of only casuals or strays. Otherwise, the species either was found more than once, or was present as more than a singleton and obviously breeding. The genus *Ceutorhynchus* is now restricted to the species living on Cruciferae (and *Reseda*).

C. assimilis: *Armoracia rusticana* (commonly), *Barbarea vulgaris*. Garden plants: *Cheiranthus cheiri* (wallflower), *Alyssum*. Clearly polyphagous.

C. chalybaeus: *Barbarea vulgaris*.

C. cochleariae: *Cardamine amara*. Garden plants: **Arabis caucasica*.

C. erysimi: **Descurainia sophia*.

C. pervicax: I can confirm its occurrence on *Cardamine amara* (queried in the list).

C. picitarsis: *Lepidium campestre*.

C. rapae: **Armoracia rusticana*, **Alliaria petiolata*, *Lepidium campestre*, **Thlaspi arvense* (?), *Sisymbrium officinale* (a major host, the only one noted by Fowler, 1891: 354; in considerable numbers on this plant at Blackheath, S.E. London, in 1973, linking up with Fowler's records (*ibid.*) for the adjacent Lee and Lewisham. Morris gives only *Descurainia*, but adds "(and other genera and species?)". *C. rapae* is less rare than often supposed.

C. sulcicollis: stated to be probably polyphagous; I have found it on *Alliaria petiolata* (once freely) and *Sisymbrium officinale*.

C. turbatus: *Lepidium campestre* (this plant is so similar in most respects to *Cardaria* (formerly *Lepidium*) *draba*, the weevil's primary host, that its occurrence on both seems very natural).

A mystery surrounds the host plant of *C. syrites* in Britain, where the beetle is so rare that available data are minimal. On the Continent it is *Camelina sativa*, a crucifer found in Britain only as an alien, in cornfields etc. In this country, however, it is stated to be *Silene inflata* (bladder campion) — not a crucifer. It seems reasonably certain that *C. syrites* was taken from the latter plant, and on more than one occasion — see Fowler, 1891: 345. Since this west Kent site was a field, one wonders whether, just possibly, the *Camelina* was growing there mixed with the *Silene*.

References: Fowler, W.W., 1891. *The Coleoptera of the British Islands*, **5**: 345, 354, London. Morris, M.G., 1991. *A taxonomic check list of the British Ceutorhynchinae*, with notes, particularly on host plant relationships (Coleoptera: Curculionidae), *Entomologist's Gazette* **42**: 255-265.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Notable records of ants (Hymenoptera: Formicidae) in south-east Sutherland

Formica sanguinea Latreille, a species with an unusual distribution in Britain, is found in the woodlands of the Central Highlands of Scotland

and then travelling southwards is not encountered until the Wyre Forest near the Welsh border (Bolton, B. and Collingwood, C.A., 1975. *Handbk. Ident. Br. Insects* 5 (3c): 25). I found a healthy colony of this species in the pinewoods at Migdale, near Spinningdale in south-east Sutherland during the summer of 1993. This is approximately 60km north of the nearest recorded colony in Glen Affric, and 100km north of the species' stronghold in the Central Highlands.

Myrmica sabuleti Meinert, not previously recorded from Sutherland, was found within the bounds of the Scottish Wildlife Trust's reserve at Loch Fleet (O.S. sheet number NH 79/89 grid ref. 815 946). Many colonies were discovered on recently-formed sand dunes. The species is morphologically similar to specimens from southern Britain, lacking the longer and coarser scape and epinotal spines of specimens from the nearest recorded colony at Garve, East Ross (Collingwood, C.A., 1951). It is worth noting that colonies of the rather local ant, *Myrmica lobicornis* Nylander, were found in the same locality as that of the *M. sabuleti*.

My thanks to C.A. Collingwood who confirmed the identification of the three species.

Reference: Collingwood, C.A. (1951). The distribution of Ants in north-west Scotland. *Scottish Naturalist*, **63**: 46.— J. HUGHES, 2 Coul Farm Cottages, Dornoch, Sutherland IV25 3QF.

Tinagma ocnerostomella (Staint.) (Lep.: Douglasiidae). New to Wiltshire.

On 13th June 1993 whilst collecting on the West Down army ranges at Shrewton Folley (SU 0948) (v.c.8), I came upon a stand of exceptionally fine flowering spikes of Viper's-bugloss (*Echium vulgare*). My attention was immediately directed towards numerous Bumble-bees (*Bombus* spp.) scrambling over the flower-spikes. I also noted that quite frequently, as a result of this rumbustious activity, many small, pale, rather delicate moths were being disturbed. Closer examination revealed that they were *T. ocnerostomella* and a very short series of voucher specimens was taken.

On 17th October I visited the area again and found, in the now dead stems of *E. vulgare*, the tell-tale signs of larval occupation, confirmed by splitting open one of the stems.

E. vulgare is a common component of the downland flora on the army ranges of Salisbury Plain. I have searched for evidence of *T. ocnerostomella* for many years in many localities, in the course of which I must have examined many hundreds of plants. This leads me to suspect that notwithstanding the frequency of the foodplant this species is probaably very local within the county.— M.H. SMITH, 42 Bellefield Crescent, Trowbridge, Wiltshire.

Curious behaviour by *Poecilocampa populi* L. (Lep.: Lasiocampidae)

At 9.15am on 3rd December, a bright, mild morning following a week of intensely cold weather, I removed my m.v. trap to the shed for examination — the usual process. It was not jarred on its journey, nor when placed in the shed. Almost immediately many of the *P. populi* became active, and with the removal of the light flew out towards the window where they remained fluttering for a few minutes before settling on the window frames. Within seconds almost all of just less than fifty specimens, including twelve females, had left the cartons.

The procedure carried out was routine, the light from the window being sufficient for normal identification purposes, and although not infrequently a moth will be disturbed, especially when the cartons are removed, I have not previously encountered a spontaneous mass awakening and call to activity of this kind.

Only three other species were present in the trap — *Agrochola macilenta* Hbn. (3), *Erannis aurantiaria* Hbn. (1) and *E. defoliaria* Clerck (2), including a very fine ab. *progressivea* Haverkampf, by far the scarcest of the normal run of forms here. These species remained quiet.— B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Three species of Lepidoptera new to the Isle of Wight

On 24th May 1993 Simon Colenutt took a fresh example of *Hadena albimacula* (Borkh.) at m.v. light at his home at Chale Green. This is the first time that this species has been recorded on the Island but it is probably breeding on the south coast on the Isle of Wight where its foodplant occurs.

My brother Dr R.P. Knill-Jones has recently identified two species of microlepidoptera which have not been taken on the Island before. These are *Zelleria hepariella* (Stain.) which was taken at light at Freshwater on 14.vii.1987 and the Tortrix *Crocidosema plebejana* (Zell.) which was also taken at light at Freshwater on 18.vi.1990.— S.A. KNILL-JONES, Roundstone, 2 School Green Road, Freshwater, Isle of Wight.

***Choleva glauca* Britten (Col.: Catopidae) in Kent**

Through some oversight I had omitted to record what appears to be the earliest capture of the above beetle in Kent, when on 20.ix.1951 I took a male from a rabbit burrow in sandy ground at Knole Park, Sevenoaks. My friend Mr Norman Heal has collected the species in the county in recent years, and will doubtless publish his records. *C. glauca* is one of the rarer species of the genus, which I have also, singly, from Meavy Valley, S. Devon, in moss (ix.1933) and Wellington College, Berkshire (23.vii.1911, P. Harwood).— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

***Aglais urticae* L. (Lep.: Nymphalidae): hibernation in first brood**

On 26th July 1992 I noticed that two *A. urticae* had settled upon the white ceiling of a cupboard in an east-facing upstairs room with permanently drawn curtains, to be joined by two more by 8th August. Despite the room becoming exceedingly hot by day at times during August and September, and again in the spring, the butterflies remained in place until 24th May. Two days later the first three to hibernate had departed, while the fourth, when examined in June was found to be deceased.

In south-east England there are two generations, the first in June and the second in August and September. The major textbooks are in agreement on this, but they are neither so precise nor in agreement regarding hibernation, which is surprising in view of the description given by Barrett (*The Lepidoptera of the British Islands,* 1893). He states that hibernation is not induced by cold weather, and that all individuals are not influenced in the same way. He details examples, e.g. of two butterflies going into hibernation in early August at a time when young larvae for the second brood were plentiful, and the two individuals remaining torpid throughout the intense heat of an unusually hot spell in early September, to be joined by others during that month. He adds that specimens which continue on the wing through the autumn die at the approach of winter. Despite this, South (*Butterflies of the British Isles,* 1939) confines hibernation to the second generation.

Ford (*Butterflies,* 1945) suggests that it may be the heat of summer rather than the cold of winter that drives some species of hibernating butterflies into retreat, and less controversially, that some species, including *A. urticae,* start to hibernate in early August, or even late July. This contrasts with Emmet and Heath, Eds (*The Moths and Butterflies of Great Britain and Ireland,* 1987) in which it is stated that hibernation occurs in the autumn, although conceding that it may begin as early as mid-August, while Plant (*Butterflies of the London Area,* 1987) comments that hibernation lasts from about late October until late February or early March, but involving both generations.

A. urticae is one of the commonest butterflies, so it is surprising that there is not more agreement in the textbooks. Barrett did produce evidence in support of some of his statements; subsequent authors have not. However, his view that specimens which remain active well into the autumn die before winter seems to require substantiation. The subject of hibernation in *A. urticae* is complex; its commencement covers a very long period, and it has been a neglected subject. Curiously, the journals contain records almost annually of winter sightings of active hibernating butterflies, and *V. atalanta,* yet records of early or particularly late entering into hibernation are almost non-existent. I have found one, R. Uffen (*Proceedings and Transactions of the British Entomological and Natural History Society,* **18**: 51), who notes an *A. urticae* hibernating from late July, 1984 in Hertfordshire.

The specimens quoted as successfully hibernating at Dartford in 1992/93 were torpid for a very long period, almost ten months, despite enduring high temperatures in April and May. Unfortunately the butterfly has been scarcer in 1993 than I have ever known it previously; only a casual specimen or two have appeared on the *Buddleia* and *Aster novi-belgii*, and none on the *Sedum spectabile* in my garden, and the ivy blossom in October visited daily was patronised only by *P. c-album*, so it is not surprising that my upstairs rooms, somewhat unusually, possess no hibernating butterflies this year.— B.K. West, 36 Briar Road, Dartford, Kent DA5 2HN.

Dwarfism in moths: further evidence from Cardiganshire, mid-Wales, 1991-92

A trend towards dwarfism in twelve species of wild-caught moths at Cnwch Coch, Cardiganshire, was reported in *Ent. Rec.* (1990) **102**: 182-183. Since that time ten additional examples have been observed. One example in 1991 and five examples in 1992 involved five species of moths (Table 1). Four specimens of three species were of minimum size. It was postulated that environmental conditions prevailing during development particularly of larvae resulting in deprivation of good quality food and inadequate water requirements are important factors in causing dwarfism in the wild. Climatic instability has been a feature for a number of years recently. During this period extremes in weekly and monthly temperatures and of rainfall have been nationally noteworthy. However, it was interesting that in the long term, taking a mean of three consecutive years of monthly averages of temperatures, equality resulted: 51°F. (1990), 50°F. (1991), 50°F. (1992) at Cnwch Coch, Cardiganshire.

On day-by-day climatic data for July, 1990, spring was the warmest it was claimed for three hundred years. The drought in July of nineteen consecutive days without rain and very high temperatures resulted in soil becoming cracked and dried out to a depth of several inches such that it caused established Rhododendron and Azalea bushes to wilt severely. High temperatures continued, resulting in a heatwave, and 3rd August was claimed to have had the hottest-ever recorded temperature in Britain, reaching 96°F., and 94°F. at Cnwch Coch. These very high temperatures and drought conditions came too late to affect most larvae which had already reached maturity, but the number of adult species observed in August was low at fifteen, the same as in 1992. There were twenty-three species in 1991, and thirty-three species in 1993. Such yearly fluctuations have been observed previously and are not unusual. If dwarfism is influenced by climatic extremes prevailing during the weeks of development of immature stages, the expectation for dwarfism to occur in 1992 was confirmed.

May 1992 was the warmest in some places since 1948. On the 14th May at Edinburgh, 90°F., at Norfolk on 20th, 91°F., at Cnwch Coch, 80°F. These hot days continued at Cnwch Coch throughout June in the 70s°F. to reach 82°F. on 30th June. With no rainfall from 12th June, the soil was hard and dried out; even more so in early July. However, from the 4th there was a slow decline from extreme conditions. Moths coming to light in August and September were, as anticipated, showing signs of dwarfism in some specimens of several species. Measuring the distance from the centre of the thorax to the apex of the forewing × 2, new minima in the size of the following species of moths were established. Also four specimens of three species were of minimum size.

Table 1. New minimal wing expanse in some moths

Species	Date	Min. wing expanse mm	Min. wing expanse (Skinner 1984)* mm
Opisthograptis luteolata L. (Brimstone)	23.viii.92	30	33
Selenia dentaria F. (Early Thorn)	2.viii.92	34	40
Cerapteryx graminis L. (Antler Moth)	30.viii.91	26	27
Mesapamea secalis L. (Common Rustic)	3.ix.92	30	31
Luperina testacea D. & S. (Flounced Rustic)	25.viii. & 4.ix.92	30	32
Moths of minimal wing expanse			
Chloroclysta truncata Hufn. (Common Marbled Carpet)	5.ix.93	32	32
Atethmia centrago Hb. (Centre-barred Sallow	17.ix.92	32	32
Luperina testacea D. & S. (Flounced Rustic)	25.viii & 4.ix.92	32	32

*Skinner, B. (1984). *Colour identification guide to moths of the British Isles*, Viking.

PHILIP M. MILES, Werndeg, Cnwch Coch, Aberystwyth, Dyfed, Wales.

CONTRIBUTIONS

Readers are reminded that they are the main source of material for the Journal. **We urgently need papers, notes and observations for publication, particularly on British and European Lepidoptera, Coleoptera and other orders. Please see the inside front cover for details of how to contribute.**

HELP WANTED

Records of sites/species of invertebrate conservation importance wanted for the Peak District National Park: must be site-specific and significant. If you hold any useful records please contact RHODRI THOMAS, Ecologist, Peak Park Joint Planning Board, Aldern House, Bakewell, Derbyshire DE45 1AE. (Telephone: 0629 814321.)

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION
(Founded by J.W. TUTT on 15th April 1890)

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SPECIAL NOTICE. The Editor would be willing to consider the purchase of a limited number of back issues.

Printed in England by
Cravitz Printing Company Limited, 1 Tower Hill, Brentwood, Essex CM14 4TA. Tel.: 0277-224610.

PUBLISHED BI-MONTHLY

Vol. 106

Nos 5—6

THE

ENTOMOLOGIST'S RECORD

AND

JOURNAL OF VARIATION

Edited by

P.A. SOKOLOFF, F.R.E.S.

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MAY/JUNE 1994

ISSN 0013-3916

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

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THE TIME OF APPEARANCE OF *LACANOBIA OLERACEA* L. (LEP.: NOCTUIDAE) IN THE BRITISH ISLES

B.K. West

36 Briar Road, Dartford, Kent DA5 2HN.

NONE OF THE standard textbooks include August within the main flight period of this widespread and common moth. However, Barrett (1897) adds that occasionally there is a second generation at the end of August, or September, or October. South (1939) adds that it sometimes occurs in the autumn. Both Heath [Ed.] (1979) and Skinner (1984) state that there is a small second brood in the south.

The three local works concerned with south-east England offer evidence regarding the time of appearance of this insect, although it is somewhat meagre in each case. Chalmers-Hunt (1968) quotes trap records for Wye, 3.v. to 3.viii.1953 followed by 14.viii. to 2.x.1953. L. and K. Evans (1973) present two series of dates for Addiscombe, Surrey — 17.v. to 21.ix.1969 and 24.v. to 29.viii.1970. C. Plant (1993) summarises the time of appearance in the London area as late May to the third week of July, with occasional specimens being seen in August in some years, as in 1976 and 1983.

My garden trap records are for the twenty-five years from 1969 to 1993 inclusive, and they are at variance with the standard textbooks and the local work by C. Plant in one particular aspect; my records suggest that there is a prolonged emergence without break from May well into August, sometimes to the end of the month. In one year records terminated in July; thus in 1975 the last specimen was seen on 18th July, but I was away from the 19th July until 12th August. *L. oleracea* is a very common species here, and in season is recorded almost every night, although never in the large numbers associated with *Agrotis exclamationis* L. or *Noctua pronuba* L.; only at the beginning and end of the season are records sporadic.

In several years, and especially in 1969, the long time of appearance continued into September. In that year the first specimen was observed on 31st May; the trap was operated in that month only on the last two nights. The sequence was interrupted from 23rd July until 15th August due to my absence, after which it resumed with a fairly even spread of records for 50% of the nights until 18th September. This was the only year to exhibit so prolonged an emergence. The pattern for 1969 is corroborated by the first sequence of records quoted by L. and K. Evans for Addiscombe, that for 1969 — 17th May to 21st September. Coincidentally, the second sequence, that for 1970 — 24th May to 29th August, is also remarkably similar to mine of that year — 18th May to 25th August.

September records are sparse, and appear to refer to late examples of a protracted sequence, and not to possible representatives of a second generation. In 1979 a specimen was noted on 5th September after a long, unbroken series terminating on 30th August. In 1982 the first moth

appeared at the trap on 20th May, but by the end of July the moth had ceased to be a constant feature of the trap, only visiting it in August on the 8th, 11th and 21st, and also on 5th and 8th September. This pattern of scattered dates suggests to me a protracted tailing off of the brood rather than the presence of a second generation. In 1985 a singleton was noted on 12th September, the species having been last observed on 18th August; on this I make no comment. 1988 was an early year, *L. oleracea* was observed almost daily from 8th May until 17th August, to be followed by two more on 5th and 6th September; this gap however becomes less significant in view of the trap not being operated on eleven of the eighteen nights between 17th August and 5th September, due to distinctly unpropitious weather conditions.

The pattern displayed by my records suggests a long period of appearance, usually commencing in May and continuing into the latter half of August, and occasionally into September. The mean date for the twenty-five year period of the end of the August sequence of records is 21st August; in calculating this I have not included September figures. The two sets of records for Addiscombe and that for Wye are in accord with my findings. In contrast the summary presented by C. Plant for the London area appears to corroborate the time of appearance given in the various textbooks, probably univoltine in most years, but occasionally bivoltine, with a large emergence from about the beginning of May until the end of the third week of July, but in some years, notably 1976 and 1983, specimens being recorded in August. How can such conflicting assessments be reconciled? Perhaps the explanation lies in the different nature of the two operations. My figures refer to a particular place for a specified sequence of years; the figures of the author of a local work are mainly dependent upon what is provided in the way of records by a number of people. There is some inertia regarding the provision of these records and usually some uncertainty of what precisely is required. Observations for scarce immigrants and rare species may be enthusiastically and faithfully forwarded, detail concerning the commonest species receives scant attention by all involved.

My observations provide almost no indication of a second generation. The August records continue smoothly from those of July; there is no indication of a resurgence in late August or September. However, a probable second generation specimen did occur in 1993; specimens were observed from 10th May until 26th August, to be followed by one in good condition on 5th October.

Perusal of past numbers of this journal has proved quite instructive; in them *L. oleracea* has received far more attention than I had anticipated. Firstly, there is evidence that the species flies in August regularly in places far away from north-west Kent, indicating that this is by no means a very local and restricted phenomenon. Thus for north-east Derbyshire Johnson (*Ent. Rec.* **66**: 146) quotes the time of appearance in 1953 as being from

25th May to 16th August; for County Cork Chainey (*Ent. Rec.* **88**: 230) states that the species is found continuously from mid-May until mid-August, while for the Isle of Canna Campbell (*Ent. rec.* **81**: 69) records that almost six hundred specimens were attracted to m.v. light between 26.v. and 11.viii.1968. Lorimer (1983) does not detail the time of appearance in the Orkney Islands, but does indicate that three dull, pale brown specimens were seen on 1st August in 1973 and 1976, and 8th August 1977; this suggests that specimens normally fly in August.

Secondly, these volumes contain evidence of bivoltinism in some northern locations. Campbell (*Ent. Rec.* **82**: 294) describes the moth as being double brooded on Canna, deducing this from m.v. light records from 1951 to 1969, and quotes the earliest and latest dates for this period as 3.v.1957 and 18.ix.1957. Goodall (*Ent. Rec.* **72**: 157 1960) comments on the species in 1959 thus — first brood 8th May to early July, early appearance and numerous, second brood 11th August to early September, a few. Harper (*Ent. Rec.* **68**: 39) describes the 1954/1955 winter weather at Newtonmore, Inverness-shire, as being the worst within living memory, followed by a mild and sunny April, and a return to winter conditions for most of May; however, prolonged fine weather later caused several species to produce second generations which were not known to have done so previously, including *L. oleracea.*

Very late emergences, too, are not confined to the south. Birkett (*Ent. Rec.* **68**: 80) records a specimen for Kendal, Westmorland, 24.ix.1955; Jackson (*Ent. Rec.* **102**: 106) notes a specimen at Muston, Yorkshire, 22.ix.1989, and Dewick (**103**: 138) records four specimens at Bradwell-on-Sea, Essex, in October 1990.

Certain conclusions can be drawn:-

(a) At Dartford there is an extended time of appearance from May to August inclusive, and sometimes into September; there is evidence that this might be so in parts of Surrey and East Kent.

(b) There is a curious anomaly — this evidence is not corroborated for the London area as a whole.

(c) August is within the normal time of appearance probably throughout the British Isles; more evidence is needed for longer periods.

(d) There is evidence that the moth is at least sometimes bivoltine in northern England and Scotland including the Western Isles.

(e) What is the propensity for *L. oleracea* pupae in confinement to produce imagines the same year? The insect is probably only reared for the obtaining of parasites!

(f) The time of appearance is surely one of the most important pieces of information about a species that should be detailed in local works; it is usually omitted!

These conclusions if correct will have revealed a quite remarkable, if not unique, fact concerning *L. oleracea*; wheras it is univoltine in the south-east, omitting the very occasional isolated October record, it may well be

bivoltine, even regularly, in some northern localities; a reversal of the usual position. What is more clearly demonstrated is the general lack of knowledge of one aspect of one of the commonest and most widespread British moths, yet one so easily remedied by the use of static traps.

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Euphranta toxoneura (Loew) Diptera: Tephritidae in East Kent

Euphranta toxoneura is peculiar amongst tephritidae in that the larvae are predatory on those of sawflies of the genus *Pontania.* Larvae of *Pontania* live either in rolled leaf-margins or inside galls on *Salix* species and it is believed that *Euphranta* larvae are specifically associated with the latter. Given that there are some dozen species of gall-forming *Pontania* in Britain, that *Euphranta* has been found associated with at least five, and that species such as *P. viminalis* (L.) may be very abundant throughout Britain and Ireland it is interesting to note the apparent rarity of *Euphranta.* To date the species has been reported from only about twenty sites within the following counties: Avon, Berkshire, Buckinghamshire, Cambridgeshire, Gloucestershire, Hampshire, Herefordshire, London, Oxfordshire, Staffordshire, Suffolk, Sussex, Warwickshire and Yorkshire. The dates of capture of the adults range from 18th May to 12th July (several recorders, pers. comm.). On 22nd May 1993 I swept a single male *Euphranta* during a short visit to Aylesford Pit near Maidstone (51/7359). The small pit has resulted from gravel extraction and consists mainly of willow and hawthorn scrub. Several species of *Salix* grow there including *Salix triandra,* the almond willow, which is uncommon in Kent. The rarity of the fly cannot be due to it having a short flight period since the dates given above suggest that it is at least comparable to many more widely recorded tephritids e.g. *Urophora cardui.* It is quite possible that the fly is actually more generally distributed but is under-recorded on account of some secretive diurnal habit.— LAURENCE CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

LEPIDOPTERA OF ABERDEENSHIRE AND KINCARDINESHIRE

7th Appendix

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THE FIRST part of this seventh appendix follows the format of previous appendices and reports the addition of ten microlepidoptera new to Aberdeenshire and Kincardineshire and two rediscovered species last recorded in the 19th century (old records of these species are included in square brackets). There follow details of species of microlepidoptera for which there are additional vice counties records.

The second section deals with additional records of macrolepidoptera, including new or rediscovered species and those which are apparently extending their range or are of interest for other reasons. Finally, the apparent disappearance of several other former residents in the area is discussed.

(i) Microlepidoptera new to VCs 91 - 93

(dates are those of the first record)

Nemophora minimella D. & S.	93. Wartle Moss, 1993
Caloptilia stigmatella Fabr.	91. Loch of Leys, cones on *Salix* sp. 1991
Phyllonorycter cavella Zell.	92. Dinnet Muir, bred 1991
Amphisbatis incongruella Stt.	92. [Common near Aberdeen (Horne, quoted by Reid, 1893)]; Dinnet Muir NNR, 1993
Bryotropha senectella Zell.	93. Gight woods, 1990
Blastodacna hellerella Dup.	92. Port Elphinstone, Inverurie, one; 7/93 in the Rothamsted trap run by Mr and Mrs J. Bailey
Hysterophora maculosana Haw.	91. Elf Hill, 1993 [92. Common at Inverurie (Trail 1878) 93. Pitcaple (Reid, 1893)]
Epiblema roborana D. &. S.	92. Dinnet oak wood 1990
Pammene obscurana Steph.	92. Grandholme Moss, 1993
Cydia cognatana Barr.	92. Linn of Quoich, 1993
C. injectiva Hein.	93. Peterhead; three bred in 1993 from cones of *Pinus jeffreyi* imported from the USA (Tuck and Young, 1994)
Platyptilia ochrodactyla D. & S.	92. Peterculter, 1990

Of the above, *Cydia cognatana* deserves special mention. This species of the Scottish Highlands is recorded in textbooks (e.g. Bradley *et al.*, 1979) as occurring in Aberdeenshire, yet, as far as we can ascertain, there are no actual published records and consequently that from Glen Quoich, where the species was seen by the authors and Dr J.R. Langmaid on 1.vii.93 is the first formal inclusion of the species in a list of Aberdeenshire moths.

New vice-county records

New to VC 91. *Rhyacionia pinivorana* L. & Z.; *Epiblema tetragonana* Steph.

New to VC 92. *Blastobasis lignea* Wals.; *Agapeta hamana* L.

New to VC 93. *Eriocrania subpurpurella* Zell.; *Stigmella ruficapitella* Haw.; *Lampronia rubiella* Bjerk.; *Phyllonorycter harrisella* L.; *P. heegeriella* Zell.; *Sesia bembeciformis* Hb.; *Ypsolopha vitella* L.; *Blastobasis decolorella* Woll.; *Aethes smeathmanniana* F.; *Olethreutes obsoletana* Zett.; *Apotomis sauciana grevillana* Curt.; *Blastesthia posticana* Zett.; *Aphomia sociella* L.

Now recorded from all 3 VCs *Stigmella salicis* Stt.; *S. floslactella* Haw.; *S. crataegella* Klim.; *S. glutinosae* Stt.; *Heliozela resplendella* Stt.; *Tinea pellionella* L.; *T. trinotella* Thunb.; *Lyonetia clerkella* L.; *Parornix anglicella* Stt.; *Phyllonorycter ulmifoliella* Hb.; *Elachista atricomella* Stt.; *E. alpinella* Stt.; *Schiffermuelleria similella* Hb.; *Depressaria pulcherrimella* Stt.; *D. weirella* Stt.; *Agonopterix ocellana* F.; *Acleris sparsana* D. & S.; *Hedya dimidioalba* Retz.; *Epinotia immundana* F. v R.; *Epiblema costipunctana* Haw.; *Pammene rhediella* Cl.; *Cydia internana* Guen.; *Scoparia pyralella* D. & S.; *Eudonia truncicolella* Stt.; *E. mercurella* L.; *Pleuroptya ruralis* Scop.

(ii) The macrolepidoptera

Four macrolepidoptera have been added to the list, three of these are "rediscoveries" from the 19th century lists of Reid (1893) and Trail (1878).

Pararge aegeria L. was recorded once in the last century, [two at Hazelhead, Aberdeen City; VC 92(Reid, 1893)]. The status of these early records is not clear but the recent spread of the Speckled Wood from the west coast via Inverness and the Moray coast is well documented (Barbour, 1986) and it can be considered as a recently established resident in VC 93 where R. Leverton found it commonly near Huntly in 1991 (Leverton, 1991).

Eupithecia tripunctaria H.-S. was recorded as rare at Pitcaple (Reid, 1893) and a single specimen taken at Oldmeldrum in 1993 suggests that this species may be a low density resident in VC 93.

Peridroma saucia Hb. on the other hand is a well-known migrant which seldom reaches this far north. Recorded as rare by Trail (1878) (no localities given), the only recent records are of single specimens at Oldmeldrum in 1986 and 1992.

Orthosia gracilis D. & S. is the only macro for which there are no previous records. A single specimen was taken at the Sands of Forvie NNR, 1991, it is not known to be migratory and is perhaps a newly-established resident species in north-east Scotland.

Since the publication of the previous appendix (Palmer & Young, 1991) there have been only two new macro records from VC 91 (*Orthonama vittata* Borkh. and *Eupithecia tenuiata* Hb.) and only one (see below) from VC 92. In contrast, North Aberdeenshire (VC 93) is an under-recorded area and therefore, although the macros are not usually recorded by vice-county, the occurrence in VC 93 of many new macros should be mentioned, even if some are only of local interest. The new records (from Oldmeldrum unless otherwise stated are:
Callophrys rubi L. (Loch of Strathbeg, 1992); *Trichiura crataegi* (The Buck, 1990); *Eulithis prunata* L.; *Electrophaes corylata* Thunb.; *Epirrita filigrammaria* Hb.; *Eupithecia assimilata* Doubl.; *Semiothisa wauaria* L.; *Petrophora chlorosata* Scop.; *Ectropis bistortata* Goeze; *Euxoa nigricans* L.; *Xestia castanea* Esp.; *Papestra biren* Goeze; *Xylena vetusta* Hb.; *Agrochola lota* Cl.; *Atethmia centrago* Haw.; *Cryphia domestica* Hf. and *Scoliopteryx libatrix* L. (Sands of Forvie NNR, 1993).

Whilst most of the above have probably been resident for many years, others such as *Rhyacia simulans* Hf.; *Hoplodrina blanda* D. & S.; *Caradrina morpheus* Hf. and *Pseudoips fagana* F. may be recent arrivals. One non-resident not previously recorded from North Aberdeenshire is *Colias croceus* Geoffr., which was recorded from many parts of Scotland in 1992, including records from Cruden Bay and The Cabrach.

Some confusion has arisen over the species now known as *Apamea zeta assimilis* Doubl. (Mikkola & Goater, 1988). In the original list (Palmer, 1974) *A. exulis assimilis* Doubl. was recorded from Ballater. In the third appendix (Young et al., 1981) the record from Udny was referred to incorrectly as *A. exulis* Le Feb., whilst the first VC 93 record (Palmer & Young, 1991) was, also incorrectly, called *A. maillardi exulis*. All three of these records, and a subsequent specimen from VC 93 (Oldmeldrum, 1993) are of the mainland subspecies *A. zeta assimilis*. Whether the moth breeds in these low lying areas is not known, more probably the few records are of strays from higher ground to the west, in either case there is no evidence of migration of the Shetland subspecies to Aberdeenshire.

Another species worth closer attention is *Euchoeca nebulata* Scop. The record of a single specimen from VC 92 (Palmer & Young 1991), and the record of a second specimen in Gight woods, VC 93, in 1992 suggests that this species may be another low density resident. Both records were from suitable habitats, i.e. woodlands containing plentiful and long-established alder.

This situation contrasts with the status of *Alcis jubata* Thunb. which was new to north-east Scotland when a single specimen was recorded from Dinnet Oakwood NNR in 1987. Four years later *A. jubata* was the commonest moth at light in the same wood, a conservative estimate of 40 specimens were seen there on 2.viii.91. The species remains common at Dinnet Oakwood and five were taken at a portable trap in a second locality in VC 92, an oakwood near Monymusk, in 1990.

An even more remarkable spread has been achieved by *Lomaspilis marginata* L. This species is generally considered to be widespread throughout Britain but was first recorded in north-east Scotland in 1986, from VC 91 (Palmer & Young, 1991). Since then it has been recorded from three other localities in Kincardineshire and from five localities in VC 92. It was first recorded from an urban garden (where R.M.P. has run light traps for 24 years) in 1993. The first record for VC 93 was in 1992, at Oldmeldrum, where M.R.Y. has been running a light trap since 1979.

To counteract this picture of a consistent gain of species by the north-east corner of Scotland, some losses should be mentioned. The first is *Cataclysta lemnata* L., which became established in a pond in the City of Aberdeen following introduction of the foodplant in 1982. This species subseqently disappeared when the pond was cleared. *Erynnis tages* L., was recorded near Monymusk until about 1970; *Nymphalis polychloros L.* bred regularly in Lauchentilly wood near Kintore until the 1950s; and *Eurodryas aurinia* Rott., was a well documented resident at Pitscurry moss, near Inverurie, well into the 1960s. These three butterflies were all recorded by the late W. McWilliam and all appear to be extinct in the area. The same is probably true of three macro moths; *Polychrisia moneta* F. spread into Aberdeenshire about 1945 (specimens bred by the late Dr G. Morison now in coll. of R.M.P.); the species persisted until 1958 but has not been seen since then. *Hemaris tityus* L. was recorded from the Muir of Dinnet (VC 92) in 1938, from Banchory (VC 91) in 1942 (G. Morrison) and from woodland near Kemnay (VC 92) until about 1960 (W. McWilliam) but also sadly seems to have gone. Far more remarkable was the record of *H. fuciformis* L., also by W. McWilliam in the same Kemnay locality as *H. tityus* and until about the same time. Were it not for the fact that the specimens still exist in W. McWilliam's collection these records would be hardly credible, being so far beyond the recognised range of the species. However the occurrence of other species in similarly disjunct localities, such as *Aethes rutilana* Hb. in Wester Ross (Agassiz, 1984), suggests that nothing is impossible.

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Further records of *Tipula helvola* Loew (Diptera: Tipulidae) in Kent

Stubbs, 1992 (*Provisional atlas of the long-palped craneflies (Diptera: Tipulinae) of Britain and Ireland*) shows two Kent localities for this hitherto poorly recorded species, both of which are within the western half of the county. Although I had submitted records to the Tipulidae recording scheme from one site in east Kent as long ago as 1981 these had unfortunately escaped inclusion in the atlas. Having found the species again in both east and west Kent in 1993 it is perhaps worthwhile recording the circumstances under which the specimens were found.

The first specimens were found on 7.vii.1979 (and again on 13.vii.1983) within a small chestnut coppice with oak standards at Murston (51/929651). The coppice is interesting in that it lies on the boundary between a plateau of sand and the coastal clay of the north Kent marshes. Consequently part of the coppice remains relatively dry whilst the remainder is often very waterlogged. On the first visit numerous males and females were in evidence at about 19.30 hours amongst a dense stand of nettles.

On 3.vii.1993 I led a meeting of the Kent Field Club at Eccles Pit (51/7261). Part of this site is damp and densely overgrown with willows. At about 11.45 I swept a single male from nettles growing in dappled shade within such a spot. Further sampling in the drier regions of the pit yielded no other specimens. Further examples of the fly were taken on 18.vii.1993 at Chiddingstone Ponds (51/5147) and on 2.viii.1993 at Lenham Heath (51/9149). The former site lies on the clay and contains numerous water-filled pits resulting from past extraction of material for bricks. Two males were again swept from nettles growing in the shade. The site at Lenham Heath where a further male was obtained is an open sandpit. The southern margin of the pit contains some damp areas and has become colonised by sallows. The single specimen was obtained by sweeping a patch of *Juncus* in this damp area. Although Stubbs states that *Tipula helvola* is a species of dry woodland it is pertinent to note that the adults recorded in Kent have tended to occur within the damper regions of such woods.—LAURENCE CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

Migrant lepidoptera taken in the Dungeness area during 1993, including three species new to Kent

During 1993, I was fortunate enough to take two species new to the county, at m.v. light at Dungeness, Kent. The first was a male example of *Agrotis trux* Hbn. (the Crescent Dart), taken with immigrant species on 10th September, a date suggestive of a second-brood individual. The nearest English colony of this species is to be found at Eastbourne, Sussex, where bivoltinism is apparently unknown (C. Pratt, pers. comm.), and this also appears to be the case in Cornwall (W. Kittle, pers. comm.). It is probable, therefore, that the Dungeness specimen, which occurred in a light southerly airstream and was followed by a single *Palpita unionalis* Hbn. at the same trap-site on 11th September, was of a continental origin.

The second species new to Kent occurred to me at Dungeness on 11th October, a male *Ochropleura leucogaster* Freyer (Radford's Flame Shoulder). This specimen represents the fourth British example of this species and breaks the sequence of 17th October records, the other British records all having occurred on this date as follows: Walberton, W. Sussex, 1983 (J. Radford); Swanage, Dorset, 1990 (D.C.G. Brown); near Truro, Cornwall, 1990 (P.N. Siddons).

A third species new to the county was taken by K. Redshaw at Dungeness on 24th May. This was a rather worn male example of *Harpyia milhauseri* Fab. (the Tawny Prominent), a species with only one previous British record, at Aldwick Bay, Sussex, in June 1966 (R.R. Pickering).

In addition to the three species added to the county list, two species only recorded on one prior occasion in Kent, also occurred during the 1993 season. These were *Chrysodeixis chalcites* Esp. (the Golden Twin-spot), of which a single male specimen was taken by Miss P. Carter in Lydd on 19th August; and *Photedes extrema* Hbn. (the Concolorous), single males of this species being taken at Greatstone on 1st June by B. Banson and at Dungeness on 10th June by myself.

A number of other noteworthy species were recorded in the Dungeness area during 1993 and these included a male *Nola aerugula* Hbn. (Scarce Black Arches) at Greatstone on 2nd July (B. Banson); a female *Hyles euphorbiae* L. (Spurge Hawk-moth) at Dungeness on 12th August (D. Walker); a male *Macdunnoughia confusa* Steph. (Dewick's Plusia) at New Romney on 21st September (K. Redshaw); and two male examples of *Trigonophora flammea* Esp. (Flame Brocade) at Dungeness on 10th October (A. Butcher) and 12th October (K. Redshaw).

In the context of the generally poor 1993 season, both for resident and migrant Lepidoptera, this is a rich array of unusual immigrant species, and would suggest that the proximity of mainland Europe to this corner of Britain allows even the most localised of weather conditions to produce continental immigration.— S.P. CLANCY, Dehli Cottage, Dungeness, Romney Marshes, Kent TN29 9NE.

SOME INTERESTING MOTH RECORDS FROM THE PETERBOROUGH AREA IN 1992 AND 1993

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Introduction

MOTH RECORDING in the Peterborough area has had a long but patchy history. Whitwell (1845) published a short list, indicating that recording in the area was well under way at that date. There have been a number of later contributions on the moths of the area, though many are unpublished manuscripts or exist in the form of data labels in collections at Peterborough Museum and elsewhere. Some of these are referred to by Waring (1992a-d, 1993a) and Waring et al. (1992). Pooles (1932) published a very full list for the area and Chalmers-Hunt (1989) reports that he has a copy which Pooles annotated with additional records for the period 1946-66. There is a typescript attributed to the late R.E.M. Pilcher on the Lepidoptera of Castor Hanglands and Ailsworth Heath 1911-1960 which is in the English Nature files at Peterborough and includes records from the author's father and Messrs W.T. Mellows and W. Quibell among others.

There are additional notes supplied by S.W.P. Pooles up to 1964, and from Brian Elliott for 1964. Several key sites near to Peterborough are well-known nationally and have extensive moth lists of their own. In addition to Castor Hanglands there are Bedford Purlieus, Holme Fen and Woodwalton Fen. Whittlesey Mere, which was drained in the 1850s, lies just south of Peterborough and this area, and the Fens generally, were well-worked for moths from the early nineteenth century and have an extensive literature of their own. The lists of Lepidoptera in three Victoria County Histories also refer to the Peterborough area, owing to the proximity of Peterborough to the county boundaries of Northamptonshire, Huntingdonshire and Cambridgeshire, a situation which has always complicated biological recording.

Most of Peterborough is in vice-county Northamptonshire but the land immediately to the east is in the vice-county of Cambridgeshire. The cathedral city of Peterborough is bisected by the River Nene, which runs in a west to east direction, and the part of the city on the south bank, and the land to the south, is in the vice-county of Huntingdonshire. The Lincolnshire border, which loosely follows the course of the River Welland, is only 5km north of Peterborough and the Leicestershire border is only 12km to the northwest. Since the reorganisation of administrative boundaries in 1974, Peterborough finds itself within the modern county of Cambridgeshire which has absorbed the old county of Huntingdonshire.

In terms of present day moth recording in and around Peterborough, two groups are particularly active — the Peterborough Biological Recording Group and the Huntingdonshire Moth and Butterfly Group.

The two have close links and have some members in common. The Peterborough group was reformed in 1988, is based on Peterborough Museum and covers all branches of wildlife recording. In 1991 the group was given permission to record the wildlife of the Milton Estate, which includes most of the woods to the immediate west of Peterborough. Moth work within the group has concentrated on these woods, most of which appear not to have been worked for moths in the past on account of the fact that they are private and keepered. The results so far have been reported by Waring et al. (1992, 1993). Mick Beeson and our Moth Recorder for the Group, Malcolm Hillier, are also involved in a long term project up-dating the records for Castor Hanglands National Nature Reserve, along with the site manager Chris Gardiner.

The Huntingdonshire Moth and Butterfly Group (HMBG) was formed late in 1988 by Marney Hall and Nick Greatorex-Davies to provide an opportunity for local lepidopterists to get together on a regular basis and exchange local information. It has close links with the much older Huntingdonshire Fauna and Flora Society. Since 1990 HMBG has produced an annual report which has provided a great incentive to exchange and publish our results at the end of each year.

During 1992 and 1993 the number of light traps operated on a regular and fairly frequent basis in or near Peterborough increased to at least twelve as far as I am aware, with others operated on an occasional basis. Other recording techniques have also been used. A number of records were collected which are of more than local interest and these are summarised below. The regular trap operators based loosely on Peterborough include Mick Beeson (Scotsman Lodge west of Helpston, Northants. TF118031), Malcolm Hillier (Helpston village, TF131048), Chris Topper (Helpston village, TF114054), Chris Gardiner (Castor Hanglands, TF119015, with Messrs Beeson and Hillier), Debbie and Howard Hillier (Old Fletton, vc Hunts. TL187969), Peter Marren (Easton on the Hill, Northants. TF0104), Margaret Palmer (on my behalf at Tolethorpe, Leicestershire TF0210 in 1992), Bill Pugh and Sue Edwards (at Longthorpe, Peterborough, Northants. TL167986, on my behalf in 1993), David Sheppard (Hanthorpe, near Bourne, S. Lincs, TF0824), Peter Kirby (at Bretton, Peterborough, vc Northants. TF163011), Alan Stubbs (centre of Peterborough in 1993, vc Northants. TL197998) and the author at Werrington, vc Northants. TF164034). Trap coverage continues further afield, some of the results of which have been reported elsewhere e.g. Partridge (1992, 1993), Smith (1989), and others extensively in the HMBG reports, particularly Barry Dickerson and David Evans, who have recorded moths on a large number of sites in vc Huntingdonshire.

Some of the most interesting records from around Peterborough are arranged below in loosely chronological order. In some cases the coincidence of dates suggests patterns of local movement.

1992

A Red Swordgrass *Xylena vetusta* Hb. was taken at the Robinson trap at Castor Hanglands on 28th February 1992, followed by a White-marked *Cerastis leucographa* D. & S. at the same site on 20th March 1992, the recorders being Malcolm Hillier, Mick Beeson and Chris Gardiner. Continued trapping at the site produced the Brindled White-spot *Paradarisa extersaria* Hb. on 23rd May 1992 and again the following year on 11th June 1993.

A Bordered Straw *Heliothis peltigera* D. & S. was captured by Malcolm Hillier at his trap at Helpston on 23rd May 1992. This species turned up again in the area two months later, as a singleton light-trapped by P. Waring in the garden of 1366 Lincoln Road, Werrington, Peterborough on the night of 29/30th July 1992. This was a period of much migrant activity locally, including numbers of Silver Ys *Autographa gamma* L.

A single Orange Footman *Eilema sororcula* Hufn. was captured in the Robinson trap at Castor Hanglands, Northants 29th May 1992 by Messrs Hillier, Beeson and Gardiner. It is unclear whether this record represents a resident species or a vagrant. The moth proved to be a female which laid a batch of fertile eggs from which larvae hatched. This is the first and only record of the species from this site in recent years, in spite of much recording activity.

An adult and pupal cases of the Lunar Hornet Clearwing *Sesia bembeciformis* Hb. were found by Chris Gardiner at the recently declared Collyweston Great Wood and Eastern Hornstocks National Nature Reserve (TF0100) on 12th June 1992. This site is proving to be very species-rich for moths.

A Marbled Clover *Heliothis viriplaca* Hufn. was captured by Peter Kirby in his Robinson trap at Bretton, Peterborough on 29th June 1992.

A colony of the Four-spotted Moth, *Tyta luctuosa* D. & S. exists at Werrington Junction, Peterborough. Adults were seen from 23rd May to 21st June 1992 by day and larvae by night on 1st July 1992. This colony has proved to be large and extensive with over a hundred moths being seen along the railway line during 1992. For further details see Waring (1992b). The recorders were P. Waring, M. Hillier, M. Parsons, M. Beeson. Mick Beeson also recorded a singleton at his home light trap at Scotsman Lodge, Helpston, on 21st May 1992. The quarry behind the house was searched after the capture but no more were found. Malcolm Hillier has recorded the moth most years at his light trap at Helpston but it was only in 1992 that the breeding sites and larvae were found. A single adult was recorded by David Sheppard, on the outside of his garden light trap at Hanthorpe on 1st June 1992. This is the only specimen so far noted at this trap. A single male was subsequently found on 7th August 1992 at Orton brick-pit on the southern edge of Peterborough (vc Hunts.) by Malcolm and Howard Hillier.

A Striped Hawk-moth, *Hyles lineata livornica* Esp. was captured at Castor Hanglands, Northants, 22nd May 1992, in a Robinson trap operated in a glade within the woodland by C. Gardiner, M. Hillier, P. Waring and other members of the Peterborough Biological Recording Group. This was one of a number of records of this species in Britain between 14th May and the end of May 1992, indicating a considerable influx. P. Waring recorded another hovering around in his Robinson trap near Shalfleet, Isle of Wight, at 00.15 hours on 28th May 1992.

A Peacock moth, *Semiothisa notata* L. was captured at Castor Hanglands by Messrs Gardiner, Hillier and Beeson on 5th June 1992, followed by a Pale Shining Brown *Polia bombycina* Hufn. at the same site on 19th June 1992. The Peacock moth may be the first record for Northants. Interestingly, the county recorder, John Ward, found one the following night at a light trap at Hazelborough Wood, near Silverstone, some 70km to the south-west of Castor Hanglands, at the other end of the county.

A Ruddy Carpet, *Catarhoe rubidata* D. & S. was captured by Margaret Palmer in an actinic trap on 23rd June 1992 at Tolethorpe. The specimen was confirmed by M. Parsons and P. Waring.

Oak Eggar, *Lasiocampa quercus* L. 1366 Lincoln Road, Werrington, Peterborough. In 1991 a single female was captured by P. Waring in the garden Robinson trap, followed by two more females on 21st and 28th July 1992. On 4th August 1992 two wild males assembled to a virgin female bred for this purpose. The few recent records of this species in the area were collected together by Waring (1992a).

Four adults of the Six-belted Clearwing *Bembecia scopigera* Scop. were swept amongst Bird's-foot Trefoil *Lotus corniculatus* at Dogsthorpe brickpits (TF212025) by Alan Stubbs on 23rd July 1992. Alan found this moth just west of Peterborough at Barnack Hills and Holes National Nature Reserve in 1985 (TF076047). Previously it had been recorded in the Peterborough area by the late J.W. Turner at Fletton Brickpits (TF185965) in 1971, when it was fairly common while sweeping on 26th and 28th July and 4th August, near the Fletton Field Study Centre. The site has since been destroyed but there are other similar places in the area. There are voucher specimens in Mr Turner's collection.

A male Red-belted Clearwing *Synanthedon myopiformis* Bork. was recorded by Alan Stubbs near two large apple trees in his garden in the centre of Peterborough on 2nd August 1992.

An Oblique Striped *Phibalapteryx virgata* Hufn. was trapped by Chris Topper at Helpston village on 6th August 1992 and confirmed by Malcolm Hillier. This is the second county record for vc Northants. One was previously recorded by Peter Gent at Wellingborough in 1955 (John Ward, pers. comm.).

Singletons of the micro-moths *Aethes smeathmanniana* Fab. (Cochylidae) and *Schoenobius gigantella* D. & S. (Pyralidae) were captured by me at 1366 Lincoln Road, Werrington and confirmed by Mark Parsons. The first is probably a new vice-county record for Northamptonshire. It was taken in the Robinson trap on 21st May 1992. The *Schoenobius gigantella* flew to a tungsten bedroom light on the evening of 30th June 1992. This also appears to be a first county record for Northamptonshire. Another individual came to Malcolm Hillier's trap at Helpston on 11th June 1993. The species is known to breed in the Fens and possibly it also breeds along the ditches and watercourses around Peterborough. Malcolm recorded one at light on the south bank of the Nene at Alwalton (TF9613) on the west side of Peterborough (vc Hunts.) on 6th July 1991.

The apparently very rare Tortricoid *Epiblema grandaevana* Lien & Z. was confirmed as resident in an abandoned limestone quarry at the Collyweston Great Wood and Easton Hornstocks National Nature Reserve, Northants, with the capture of eleven individuals at light on three nights between 31st May and 8th July 1992. Full details of the discovery of the moth, on 27th July 1991, and the subsequent work, can be found in Gardiner and Hillier (1993).

Two more apparently new vice-county records for Northamptonshire are the Gelechiid moths *Metzneria aprilella* H.-S. taken at Barnack Hills and Holes NNR by Chris Gardiner on 24th June 1992 and determined by Mark Parsons, and *Brachmia blandella* Dougl. taken at Easton Hornstocks by Chris Gardiner on 8th July 1992 and determined by John Langmaid (Mark Parsons pers. comm.).

The Twenty-plume moth *Alucita hexadactyla* L. was seen in numbers during 1992 and 1993 by Debbie Hillier at 17 St. Margaret's Road, Fletton, with two also noted at 78 Queen's Road, Fletton on 9th July 1993 by Malcolm Hillier.

1993

A survey of likely sites for the Hornet Clearwing *Sesia apiformis* Clerck has revealed the presence of the moth on Poplar trees planted as screens around various brick-pits and other sites around Peterborough (TL19). Full details of the results are to be reported by Howard Hillier in 1994. The adults were emerging on 6th July 1993, and a pair was found in *cop* on 16th July 1993 at 0800hrs.

The Currant Clearwing, *Synanthedon tipuliformis* Clerck, is established adjacent to 78 Queen's Road, Fletton, Peterborough (TL197975), on Currant bushes in the garden which backs onto this property (M. Hillier pers. comm.). Four individuals were seen at the above address between 21st-23rd June 1993, settling on leaves in the afternoon sunshine and one was brought to me live for photography. This species was also seen several

times in the same week at 78 Peterborough Road in nearby Farcet by Stuart Ball (pers. comm.). Both localities are in vice-county Huntingdonshire. A single specimen of this moth was seen by David Sheppard in his garden at Hanthorpe (Lincs.) a year or two previously.

A single male Red-belted Clearwing, *S. myopaeformis* Borkh., in good condition, was recorded by Malcolm Hillier at 160 Lincoln Road, Peterborough, on the inside wall of the kitchen, on 26th June 1993. Added to the individual recorded by Alan Stubbs nearby in 1992, these results suggest the moth is established in the older gardens of Peterborough.

Two fully grown larvae of the Oak Eggar *L. quercus* were found by myself and Rachel Thomas on a scrubby field margin by the railway track at the level crossing south of Werrington Junction on 31st May 1993. They were wandering over bare ground in a sparsely vegetated area near a Bramble plant *Rubus fructicosus* agg. sprawling along a fenceline. Apart from a single larvae found at Helpston by Malcolm Hillier in the late 1980s, these seem to be the only report of larvae in the area in several decades (see also Waring 1992a) and give an insight into the sort of habitat in which the moth is breeding. Both larvae were reared and a female emerged on 9th July and a male on 11th July. The former was placed out in the garden on 12 July and attracted three wild males (Waring 1994). Oak Eggars were also reported again in the area in 1993 by Malcolm Hillier (a female in his light trap at Helpston on 4th July 1993 and a female at Chris Topper's in the same village), and Mick Beeson (two females at light at Scotsman Lodge, on 30th July and 6th August).

The Four-spotted moth *T. luctuosa* was seen flying again at Werrington Junction on 31st May 1993 (P. Waring and Rachel Thomas). Subsequently an adult was captured at light by Pete Kirby at 49 Barnstock, Bretton (TF167011) on 10th June 1993 and a singleton turned up in the Robinson trap in my garden at Werrington on 19th August 1993. The latter suggests there may be at least a partial second generation of this species in this area.

A Grass Rivulet *Perizoma albulata* D. & S. turned up at Malcolm Hillier's trap at Helpston on 6th June 1993, the first since light-trapping began at this site in 1983. There appear to be a few local records for this species (M. Hillier pers. comm.) though it may simply have been overlooked in the area.

Four Cream-bordered Green Pea *Earias clorana* L. turned up at the Werrington trap in 1993 on 8th June (1), 9th June (1), 2nd July (2). These are the first in three years' trapping at this site but the species is regularly recorded by others in the area.

The Dog's Tooth *Lacanobia suasa* D. & S. was recorded by Debbie Hillier at 17 St. Margaret's Road, Fletton, on 18th June 1993 and confirmed by Malcolm Hillier, who has seen others in the Peterborough area in past years.

A Pale Shining Brown *P. bombycina* was recorded at Ketton Quarries SSSI, Northants (SK973056) on 1st July 1993 by Chris Gardiner.

A Red-necked Footman *Atolmis rubricollis* L. was captured in a Robinson trap on the night 3rd/4th July 1993 at 246 Thorpe Road, Peterborough, by Bill Pugh and seen alive by me. This is an area of large established gardens, with old trees. It is the first record of the species from this 10km square and we await others to see if the moth is resident or vagrant here.

A male Festoon *Apoda limacodes* Hufn. was captured at light by Malcolm Hillier at Helpston on 3rd July 1993, the first in eleven seasons trapping. This is currently the most northerly post-1980 record of the species in Britain. It is interesting that it coincides with the above Red-necked Footman on the same date at Longthorpe. The nearest potential larval foodplant for the former, a hedgerow Oak tree, *Quercus robur,* is nearly 1km away from the Helpston trap so the Festoon was certainly a wanderer. The species has long been known from Castor Hanglands and Bedford Purlieus so the moth may represent only local movement. A male Festoon was noted by Malcolm at Castor Hanglands on the previous night (2nd July). The Red-necked Footman has also been recorded at Bedford Purlieus in the past, but not since 1960 (J. Ward pers. comm.). The Thorpe Road specimen was caught 14km to the east of Bedford Purlieus.

Between 20 and 40 Blackneck *Lygephila pastinum* Treits. and one Gold-spot *Plusia festucae* L. were recorded at Sutton Heath (TF091000) on 16th July 1993 (Messrs Beeson and Hillier) and the presence of Meadow-Rue *Thalictrum flavum* along the ditch which borders the lower part of this site was noted. This was searched by me for larvae of the Marsh Carpet *Perizoma sagittata* Fab. on 8th August 1993, without success. At the same time on this site, Rachel Thomas found a nearly full grown larva of the Shark *Cucullia umbratica* L. This is not an unusual moth in the Peterborough area but there are few if any records of larvae. This larva was found, almost fully grown, at 15.00hrs in cloudy, dry, bright, warm weather. It was at rest on the stem of a yellow-flowered composite, identified as a Sow-thistle, *Sonchus* sp., leaning over short turf in a herb-rich calcareous sward on the higher ground at this site. The larva ate the flowers of the host plant when kept in captivity, and was seen feeding of its own accord at 08.00hrs in natural light in the morning. Subsequently it was offered flowerheads, leaves and stems of the Compass Plant or Prickly Lettuce *Lactuca serriola,* all of which it ate, demolishing large areas of leaf and eating down the stems before burrowing in soil to pupate on 13th August. The larva was very active and, if disturbed, would throw its head to one side and fall to the earth, which it matched in colour.

Larvae of the Goat moth *Cossus cossus* L. were found at Mepal on 10th July 1993 (Waring 1993d). A Robinson trap was operated on the site by Rob Partridge and on 18th July a battered adult was found on the ground two metres from the light trap and also a worn Pine Hawk *Hyloicus pinastri* L. on same night. The latter is unusual in the area, the former adds to a series of records of Goat moth from this site.

Larval webs of the Small Eggar *Eriogaster lanestris* L. were discovered in two localities near to Peterborough in 1993. On 25th June Mick Beeson found two larval webs at Raunds Wood, Northants (TL037737). Both webs were on Common Hawthorn *Crateagus monogyna* growing between rows of young conifers in a plantation. Both webs were about 1.3 metres from the ground, on the south-facing top parts of the Hawthorn, close to each other. The two webs contained about a dozen larvae each, in penultimate and final instars. Both webs were very conspicuous but no others were seen elsewhere in the plantation. Subsequently, on 28th June Malcolm Hillier searched the site and the surrounding area. No new webs were found in the wood and the known webs contained only three to four larvae in and around them. The entire perimeter of the wood was searched without success but four more webs were found on the approach to the wood from Keyston, lying within vc Huntingdonshire. Two of the webs were on Common Hawthorn and two on Blackthorn *Prunus spinosa*. All four were between one and two metres above the ground, in south-east-facing exposed positions on scrubby isolated bushes or at the southern end of a clump in rather poor condition. None were found on a nearby mixed hedge which was thicker and complete and included additional shrub species such as Field Maple *Acer campestris*, Common Elm *Ulmus procera*, Ash *Fraxinus excelsior* and Sallows *Salix* spp. One web was collected and some Tachinid flies were reared from the larvae. These have yet to be identified. Of 14 apparently unparasitised pupae that were retained, two females and a male emerged on about 12th February 1994, but these had been kept indoors and may have been in advance of emergences in the wild. Another male emerged on 14th March 1994.

A web of Small Eggar larvae was also found at New Bridge, Fox Road, Catworth (TL0873) only 5km south-east of Keyston, by David Evans, in June 1993. The web was on Elm, and was about five metres above the ground. The web, the larvae and the adults reared from some of them, were photographed, and the identity of this unusually highly placed web has been confirmed by the author.

Wormwood Shark *Cucullia absinthii* L. — a singleton was trapped by Debbie and Howard Hillier at Old Fletton, Peterborough, on the warm night of 28th/29th July 1993 during showers. This is apparently the first record for vc Huntingdonshire (B. Dickerson pers. comm.). The species has been recorded by Colin Smith in the adjacent county of Cambridgeshire, where it occurs on the Gogs, at Royston and, in 1988, on Mugwort *Artemisia vulgaris* at Girton (Smith 1989). The Fletton specimen, a suspected female, was identified by Malcolm Hillier and retained for eggs, but proved to be a male. It has been set by Mick Beeson for Peterborough Museum.

Six larvae of the Wormwood Shark were subsequently found by Howard Hillier on 30th August 1993 as a result of deliberate searches of likely

breeding places in the Stanground area near Fletton. All six larvae were found on a patch of nineteen large Wormwood plants *Artemisia absinthium* growing on the ballast of the railway line that passes to the north of Fletton and Stanground (TL1997). Mugwort *A. vulgaris* was also present on this site but no larvae were seen on it. A further nine larvae, of various sizes from very small to full-grown, were found by Howard at the same place on 7th September.

Singletons of the Peacock *S. notata* and Square-spotted Clay *Xestia rhomboidea* Esp. were recorded at Castor Hanglands on 20th August 1993 by Messrs Hillier and Beeson. The first follows the record in 1992 and suggests the species may be resident. The Square-spotted Clay was last seen on this site before 1961 (J. Ward, pers. comm.) but is not a noted wanderer and will probably prove to be a long-established resident. Interestingly, in this context, a single Square-spotted Clay was recorded by Peter Kirby at his garden light trap in Bretton on 9th August 1993 the only one ever recorded at this site. A single Lesser-spotted Pinion *Cosmia affinis* L. was recorded at the same trap on the night of 14th August 1993. Singletons of this species are recorded by Malcolm Hillier at Helpston on an average of about once every two years.

Some large larvae of the Privet Hawk *Sphinx ligustri* L. were found on Guelder Rose *Viburnum opulus* (Caprifoliaceae — honeysuckle family) on 30th July 1993 by Rick Keymer and were confirmed by Mick Beeson. They were in a newly-planted hedgerow at Etton (c. TF142067). The foodplant is of interest. Though not mentioned specifically by South (1961) or Skinner (1984), Guelder Rose is listed as a foodplant by Allan (1949). The plant in question was completely stripped of leaves and the larvae ate the plant when taken into captivity. From the damage to the saplings several other larvae had probably been present. The Guelder Rose was not adjacent to Privet or Ash so eggs were presumably laid on Guelder Rose. The moth is a common species in the Peterborough area, where larvae have been found feeding on Lilac *Syringa vulgaris* (Oleaceae) in gardens (Waring 1993c).

The Streak *Chesias legatella* D. & S. — a single specimen was found by an outside light at the doorway of a house in Eastern Avenue, Peterborough, at 03.00hrs on 2nd October 1993 by Mick Beeson. The larval foodplant, Broom *Cytisus scoparius,* has been planted on the verges of the ring-road that runs to the east of this site, but also occurs as a garden plant in the area.

Two species of national interest, the Maple Prominent *Ptilodontella cucullina* D. & S. and the Mere Wainscot *Photedes fluza* Hb. are frequently recorded in the Peterborough area, even in suburban gardens (e.g. Waring 1992d) and we have records of these from several local woods (e.g. Waring et al. 1992, 1993). The Concolorous *Photedes extrema* Hb. continues to be recorded regularly at Castor Hanglands and was also recorded at the Collywestern Great Wood and Easton Hornstocks NNR, on 20th May 1992 by Chris Gardiner.

A crop of first records for vice-county Northants were added among the micro-lepidoptera in 1993. Full details of these and previous years are being collated by David Manning. Many of these come from the Lepidoptera recording work at the recently declared NNR at Collywestern Great Wood and Easton Hornstocks, for example *Semioscopis avellanella* Hb. (Oecophoridae) by Mark Parsons on 20th April 1993, *Eriocrania sparrmannella* Bosc. (Eriocraniidae) and *Narycia monilifera* Geoff. (Psychidae) both on 23rd April 1993 by John Langmaid, and *Aethes dilucidana* Steph. (Cochylidae) and *Mompha conturbatella* Hb. (Momphidae), both on 29th June 1993 by Mark Parsons.

A male and female of the European Corn-borer *Ostrinia nubilalis* Hb. were noted by Malcolm Hillier on 9th September 1993 at 78 Queen's Road, Fletton.

Acknowledgements

I would like to thank all the above-named for their work in recording the moths of the Peterborough area. I particularly thank Malcolm Hillier, the moth recorder for the Peterborough Biological Recording Group, for collecting many of the above records and Barry Dickerson, editor and producer of the HMBG annual report as well as county moth recorder for the vice-county of Huntingdonshire. I would also like to thank John Ward, the county moth recorder for Northamptonshire, for his help and encouragement to us all and Gordon Chancellor, at the Peterborough Museum, for co-ordinating the Peterborough Biological Recording Group. I thank Mrs J.W. Turner for allowing John Ward and I to examine the moth collection of her late husband and Mark Parsons for collecting together the records of the micro-lepidoptera.

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Eudonia alpina Curtis (Lep.: Pyralidae) at low altitude

Mr Clancy's note of *E. alpina* at low altitude (*Ent. Rec.* **106**: 6) concurs with my own observations of the moth in 1993, which might be of interest and support his suggestion that it resides well below 700 metres in the Aviemore area.

I took two examples at m.v. light at Granish Farm, one kilometre north of Aviemore, at an altitude of approximately 240 metres, in open birch woodland, the dates being 30th May and 2nd June. This was in open birch woodland.

On 3rd June I was in the Rothiemurchus area at Coylumbridge, surveying the open areas for eyebright with *Perizoma* species in mind, when I came across a damp hollow in which grey pyralids were flying abundantly. They were flying in the afternoon sunshine and more could be disturbed with every few steps. I netted about half a dozen at random and all were *E. alpina*. They were clearly flying within, and not through, the area. The grid reference is NH 917095, and the site is about one kilometre south of the

campsite where Mr Clancy took his examples. Furthermore, it is adjacent to the track which runs alongside that campsite and leads into Gleann Einich.

It would seem reasonable to assume therefore that there is at least one small but thriving colony of *E. alpina* in Rothiemurchus, that the source of those taken at Coylumbridge and Granish was local, and that they were not wanderers or windblown from a higher altitude.

E. alpina is stated to fluctuate in numbers. Could it be that, at times of relative abundance it descends to colonise lower altitudes, such as it is known to occupy further north, withdrawing to, or rather, surviving in higher levels in times of diminished numbers? Or has there been a recent expansion of its range as it would seem unlikely to have been overlooked previously in such well worked areas as Rothiemurchus and the Spey valley?— D.H. HOWTON, 36 Coldermeadow Avenue, Corby, Northamptonshire NN18 9AJ.

Mites associated with the dung beetle *Scarabaeus cristatus* in Kuwait

During a recent work on the dung beetle *Scarabaeus cristatus* F. collected from Kuwait desert, a number of mites were observed to attach themselves on the ventral part of the beetles especially near the base of the hind legs.

These mites were probably feeding on the dung fragments left on the beetle body after the latter had scooped its share of the dung to roll it to the underneath nest.

Five different species of the mites have been collected that belong to four genera, three families and two suborders.

Suborder: Mesostigmata
Family: Parasitidae
Parasitus consanguineus Oudemans & Voigts
Family: Macrochelidae
Macrocheles merdarius (Berlese)
Macrocheles glaber File & Peg.

Suborder: Prostigmata
Family: Pygmephoridae
Pediculaster mesembrinae (R. cane)
Bakerdania sp.

Maqueen and Berine (1974) collected cattle dung mites in the southern interior of British Columbia and have recorded that *Parasitus* and *Macrocheles glaber* associated with the dung dweller dung beetle, *Aphodius fosser* (L.) and that *Pediculaster mesembrinae* associated with the dung fly, *Haematobia irritaas* (L.). I wish to thank A.S. Baker from the British Museum (Natural History) for the identification of the mites.

Reference: Maqueen, A. and Berine, B.P., 1974. Insects and mites associated with fresh cattle dung in the southern interior of British Columbia. *J-ent. Soc. Br. Columbia,* **71**: 5-9.

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BEETLES CAUGHT BY A PITCHER PLANT NATURALISED IN HIGHLAND SCOTLAND

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PITCHER PLANTS have receptacles or "pitchers" which trap and digest insects and other small invertebrates. In 1991, several such plants, later identified as *Sarracenia purpurea* ssp. *purpurea* L., were discovered by David Wood growing together in a low-lying sphagnum bog in upper Speyside. The leaves in this plant form the receptacles which have the shape of wide-mouthed, upright vases, two to three inches long, about one inch wide and crowned with a wide, open flap (see illustration in O'Connell, 1988 p10). When S.T. visited the site in the early summer of 1992, two kinds of receptacles were present — smaller, green ones apparently just developing and larger, somewhat withered, brown ones which had evidently persisted from the previous growing season. The latter contained obvious insect fragments.

To see what sort of insects had been caught, three of the larger receptacles were collected and their contents examined. No complete insects were found but there were present parts of many beetles (heads, pronota, elytra and legs), with occasional complete hind-bodies (elytra and abdomen) together with fragments of flies, spiders and ants. Remains were found of at least 58 beetles comprising at least 11 species. These, with minimum numbers in parentheses, were:- *Carabus violaceus* L. (1), *Pterostichus "nigrata"* aggr. (2), *Agonum ericeti* (Pz.) (15), *Catops* sp. (3), *Nicrophorus investigator* Zetterstedt (2), *N. vespilloides* Herbst (21), *Thanatophilus rugosus* L. (2),*Oiceoptoma thoracica* (1), *Cyphon* sp. (2), *Coccinella hieroglyphica* L. (7) and *C. septempunctata* L. (2).

S. purpurea is a North American plant which was introduced from Canada to Ireland about 1903. It has thrived there and now occurs at several sites (O'Connell, 1988). Currently, the plant is also known, apparently always as an introduction, from a number of sites in England and Scotland. It seems very likely that the plants at the site on Speyside were similarly introduced, a conjecture supported by the discovery a few metres away of another North American bog plant — *Kalmia polifolia.*

All of the fully identified beetles had been found in the general area of the site on previous occasions. None can be described as rare. *A. ericeti* is uncommon in a national context but relatively common in the bog where the plants were found. It is unlikely, therefore, that a few small plants at this site would have any more effect on the local beetle fauna than that otherwise exerted by other insectivores such as insect-eating birds. Large colonies of the plant, however, may have hundreds of pitchers and, if each pitcher caught as many beetles as did the three examined, it is possible that

they could have a significant effect on the local populations of some of the insects trapped.

Like other "carnivorous" plants, pitcher plants grow naturally on impoverished substrates where the role of the receptacle is to provide the plant with supplementary nutrients derived from the digestion of the creatures trapped. While the number of beetles listed from the three receptacles suggests that the trapping process had been very successful, it may be that the data overestimate the gain to the plant. Several of the species, i.e. *Catops* sp., *T. rugosus* and *O. thoracica* are normally attracted to decomposing organic material such as carrion and, while some of these beetles may have been trapped and digested while the receptacle was still functional, others may have been trapped after the receptacle had started to wither and was no longer "feeding" the plant. Even this, however, may be of value to the plant by bringing nutrients from the digested beetles to within a short distance of the plant's roots.

It would certainly be of interest to discover more of the process by which the beetles are trapped. The entrance to the pitcher is large enough for the beetles to enter accidentally but the pitchers are brightly coloured red and green, which suggests that visual attraction plays a part in the trapping. This could perhaps be tested by covering the outside of some receptacles with aluminium foil to reduce any visual attraction. Chemical attraction through factors elaborated by the pitcher or by the products of digestion is another possibility. It is hoped that further studies may shed light on these matters.

Acknowledgements

We are much indebted to Mr David Wood for passing on to us his discovery of the two plant species at their Speyside site, to him and to Mr Bernard Thompson for information on the status of *S. purpurea* in Britain and to Mr David Cheek of the Royal Botanic Gardens, Kew for providing a full identification of the plant.

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A new larval foodplant for *Falseuncaria ruficiliana* (Haw.) (Lep.: Tortricidae). A correction.

In his note in *Ent. Rec.* **106**: 26-28 under the above heading Mr M.H. Smith quoted my statement to him that Razowski does not give dates for the adult. In fact May and August are given for the moth and I apologise to Mr Smith and to Dr Józef Razowski for this error.— E.F. HANCOCK, Abbotsford, Belmont, Ulverston, Cumbria.

WHEN TO WIGGLE, WHEN TO WAGGLE AND WHEN TO WALK AWAY. OBSERVATIONS ON UNORTHODOX MOVEMENT IN A TREE-HOPPER

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THE EXOTIC wonders of Guatemala started immediately upon stepping out of our cabin at the Posada Montana del Quetzal (literally the inn on the quetzal mountain), near Coban, up in the cloud forests of the mountainous centre of the country. The cabin was on the edge of the compound and wilderness started within feet.

Along with giant pink and red spotted flea-beetles, globose metallic green harvestmen, brashly coloured solitary bees and a peculiar assortment of lichenose grasshoppers was a number of bizarre spine-like tree-hoppers (tentatively identified as *Polyglypta dispar* Fowler, 1895) sitting on various leaf edges. Although the insect had a particular and distinctive structure, it was not its form, but its motion which attracted my attention — it was wiggling!

Ordinarily, movement of an insect is what catches the eye of a keen predator or keen entomologist, and one of the best defences against being snapped up by either is to remain perfectly still. However, the particular movement made by the tree-hopper had an effect opposite to what one might expect. A combination of its posture and slightly erratic motion made it look like a piece of dead leaf fluttering in the wind. This observation was even more surpirsing considering that the creature was not at all camouflaged. Its black body, marked with cream, gave it a very striking appearance (Figure 1).

At first, I thought perhaps the bug was dead, loosely attached to the leaf and was being rustled by the breeze. But others in the surrounding bushes were all making the same strange movements.

The bug, like many members of the Homoptera family Membracidae, had a large pronotum armed with horns. The two horns, one extending right over the head, the other completely covering the abdomen and wings, combined to create a hard, shining, ribbed carapace resembling a thorn. However, the leaves on which the bugs were perched did not have spines, nor did the plant's stems, and anyway the black and cream pattern of the bug was unlike any thorn to be found anywhere.

When to wiggle

When slightly disturbed, the bug tilted its body forward, touching the tip of its anterior horn down onto the leaf, and lifting its posterior into the air at an angle of about 30 degrees. Keeping the front horn aimed at the same point on the leaf, it then wiggled its behind in an irregular circular

Figure 1. A Central American tree-hopper, tentatively identified as *Polyglypta dispar,* on the edge of a leaf. The pronotum, 10mm long, and covering the entire body is produced into two horns; one at the front extends over and beyond the head, the other at the rear covers the abdomen and wings. Photo: R.A. Jones, Coban, Guatemala, 23.x.1992.

movement, at the same time irregularly rotating its body slightly from side to side (Figure 2).

The combined irregularity of these two movements created a most hypnotic effect. The harder I looked at the beast, the more its movement mimicked the random swayings of loose rubbish, attached to the leaf edge by a thread.

I "knew" the thing was a bug, and I "knew" it was alive, but its movement was so extraordinarily deceptive, that it took some minutes of close watching to convince myself what I was seeing and what it was doing.

When to waggle and when to walk away

After a while, the bug started to respond to the flashes from my camera and stopped wiggling. It lowered its derriere and for a few moments it shimmied from side to side — a waggle perhaps.

Its final move to escape my attentions was the typical move of tree-hoppers the world over, it got up and quickly walked sideways over the edge onto the underside of the leaf. As I turned the leaf over to expose it again, the bug reversed this process and scrambled sideways back onto the upper surface again. We played peek-a-boo a couple more times before I eventually left the creature alone.

Making moves

Much work has been published on insect locomotion and movement. Insect flight has been the subject of many studies, from academic treatises on the functional morphology of insect wings (e.g. Wootton, 1992) to the stunning images captured on high speed flash photgraphy (e.g. Brackenbury, 1992).

Running, digging and "wedge-pushing" have been examined with respect to the structure of beetle legs (e.g. Evans & Forsythe, 1984). Hopping and skipping have been investigated in fleas, flea-beetles, grasshoppers and springtails. The snapping mechanism allowing click beetles to leap has been extensively studied. But one particular type of insect movement appears not to have received its fair share of attention — wiggling.

Wiggling defined

The *Oxford English dictionary* expounds on both waggling and wiggling. Waggling, it states, is the frequentative of wag, and derives from origins in German and Dutch, *waggelen,* "to stagger", "to totter" and to move to and fro in short quick motions. Wiggle, on the other hand, derives from German and Dutch *wiggelen,* similar to *waggelen,* but applied more specifically to movement to and fro, irregularly and lightly. A dog may wag or waggle its tail, but the delicate fluctuations one might observe in insects can only really be best described as a wiggle.

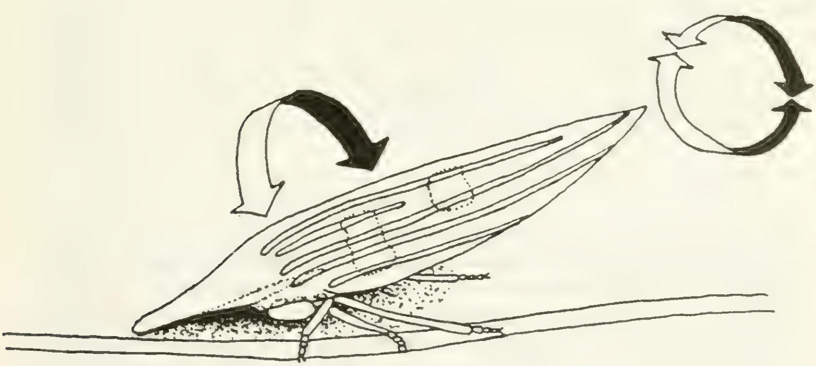

Figure 2. Diagrammatic analysis of wiggling. Head down and clinging to the leaf edge, the tree-hopper keeps the tip of its front "horn" unmoving on the leaf while it rotates its "tail" in a roughly circular movement. At the same time it twists its whole body from side to side.

What wiggles?

Despite the possibility for alluring alliteration, worms do very little in the way of wiggling, rather they writhe. The "worms" of entomology, wire-worms, glow-worms, inch-worms and horn-worms, likewise do little wiggling in deference to crawling and wriggling.

Those creatures which do wiggle, tend to do so because they have a motion not altogether under their own control. Wiggling tends to be the result of an ungainly body, a tenuous grasp on the substrate and the effects of wind and water.

The larva of a coleophorid moth, enclosed in its case, only its head and legs protruding, wiggles as it moves. With its tail end stuck up (or down) the attentions of gravity mean that the caterpillar is more concerned with clinging on tight to its foodplant than moving delicately from one part to the next. Even with minute care, its front end slowly crawling across the substrate, its nether end is apt to wiggle erratically as it moves.

A list of other wigglers might include the woolly bear larvae of *Anthrenus* beetles with their ungainly gait, the bottom-waving alarm response of aphids and almost any large insect clinging on to leaf or flower against a strong wind.

However, wiggle though they may, the motion of none of these approaches the decisive and careful movements of a certain Central American tree-hopper. I look forward to further debate in the literature on the nature of wiggling.

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Note added in proof

Since writing this short essay I have had a further chance to observe wiggling in a New World homopteran, this time in Florida and in completely different circumstances.

Walking through grass, I disturbed a brightly patterned leaf-hopper. In mid-leap, however, it was caught in a spider's orb web spun across the low herbage. But before any spider was able to make a move, the bug had freed itself from enmeshment. Hanging head down from the strands, with its wings closed, it kicked out with its large hind legs and wiggled its body in a circular movement from side to side. By this shimmying, the bug descended through the web, quickly dropping from one sticky strand to the next until it fell to the ground and escaped. Just how widespread is wiggling?

CURRENT STATUS OF THE STEM BORER, *CHILO PARTELLUS* (SWINHOE) (LEP.: PYRALIDAE)

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THE MAIZE, sorghum or spotted stem-borer, *Chilo partellus* (Swinhoe) is widespread in South Asia, but is most common in the northern plains of India from March to November. This insect was first recorded by Swinhoe in 1884 from Karachi (Pakistan) as *Crambus zonellus* and also from Poona in 1885 (as *Crambus partellus*). However, Hampson (1895) synonymised the two insects as conspecific. Later studies have revealed that there are several species of *Chilo* in nature and a number of them were grouped into *Chilo partellus* (= *zonellus*). Bhattacherjee (1971) described four subspecies of the insect as *Chilo partellus acutus C.p. coimbatorensis, C.p. kanpurensis* and *C.p. partellus* and concluded that the supposedly single homogeneous monotypic species of *C. partellus* was in fact a polytypic species.

The evaluation of diverse maize germplasms obtained from the maize breeders, collected from maize growing tracts in India and procured from northern and southern American continents, Carribean regions and European belt has revealed that the strain Antigua Gr. I. has consistently shown good tolerant reaction to the maize stem borer under artifical infestation conditions at Dehli centre of the All India Coordinated Maize Improvement Project but secured from moderately tolerant to highly susceptible grades at other locations in the country (Anon. 1969-92). This led to the conclusion that this variation in nature for resistance to the borer is partly attributable to the level of variability available in host and the variability in the pest used for evaluation (Singh, 1983). A preliminary study was therefore undertaken to examine the variability in the borer populations spread between 16.43-28.38°N, 70.42-87.75°E, 51.84-579.5 MSL and wide range of annual temperatures, rainfall, soil types and soil pH values (Table 1).

Wild cultures of *C. partellus* were brought to the laboratory and 24 hour old male and female pupae from each culture were separated (Sithanantham and Subramaniam, 1975). Considering that the gut remains free from food contents and the gonads remain in their rudimentary stage, 11-20 pupae of each sex from different cultures were individually weighed on a precision electronic balance. It was observed that the weight of the male pupae varied from 353 to 716 mg. and that of female ranged from 677 to 1039 mg. Among these, the male and female pupae from Kolhapur centre were distinctly heavier than those collected from other centres and the percentage increase in weight of the female over the male pupae was 45% as compared to other centres which varied from 86 to 92%. Similarly, the adults emerged out of these cultures showed distinct size and body colorations. The biggest male and female moths obtained from Dholi and

Table 1: Topography of the locations of borer collection and body weight of 24 hour old pupae of *C. partellus*

Location	Lat. (°N)	Long. (°E)	Alt. (MSL)	Temp (°C)		Rainfall (mm)	Soil type	Soil pH	Wt. of pupae (mg)	
				Min.	Max.				Male	Female
Dehli	28.38	77.12	228.1	11.0	36.0	635	Loam to sandy loam	7.5-8.5	458	854
Dholi	25.59	87.75	51.84	5.0	40.0	940	Sandy loam	8.3	353	677
Hyderabad	17.20	78.30	530.0	10.2	43.7	736	Sandy loam to clay loam	7.5-8.5	409	766
Kolhapur	16.43	74.14	574.0	14.3	37.0	750	Light to medium black	7.5-8.0	716	1039
Udaipur	24.35	70.42	579.5	2.0	38.0	720	Loam to clay loam	7.5-8.5	459	861

Delhi centres appeared relatively smaller in size and darker in colour than the respective sexes obtained from Kolhaper and Udaipur centres.

Although biotypes of Hassianfly (Painter, 1930), green bugs (Wood, 1961), variety of aphids (Painter and Pathak, 1962; Wilde and Feese, 1973; Nielson and Don, 1974), gall midge (Israel 1974) and plant hoppers (Pathak and Saxena, 1980) are known to occur, the information on the nature of morphological isolations, physiological races and genetically variables of the stem borers in India is lacking. The variations in the body weight of male and female pupae and adult size and body colorations among the borer cultures from different agro-climatic regions in India are attributed to the availability of the random mating populations of *C. partellus* in nature. These populations result in continous variations for virulance to the known varieties tolerant to the borer from one location to another.

I am grateful to the Project Director for providing necessary working facilities and the fellow entomologists who have helped me in insect collections.

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Hazards of butterfly collecting — Home James, please: Ghana 1993

In 1993 I had the considerable pleasure of making a survey of the butterflies in the small forest of Kakum near Cape Coast in Ghana. Nobody knows how many species of butterflies may be found in single localities in West Africa. I noted 360 species during my own first three sets of visits. Well over 100 species would be seen on any given day. I expect the total gradually to grow to at least 550, nearly two thirds of all the species known from the entire country. This in a forest of only 270km^2.

Since I was not equipped to camp, and needed electricity for the computer, I stayed in Cape Coast, commuting to the forest every morning if the weather was OK. A schoolteacher named Oscar, whose family ran a taxi business, arranged to send a taxi at 07.30 which I could then use, postpone, or cancel depending on circumstances. They owned three Lada cars, the virtues of which he highly praised, the only time I have heard anybody say something nice about a Lada.

The same arrangements could not be made for the return trip. I could never be sure when I would want to leave. On a sunny day activity tapered off at 14.00, which coincided neatly with the fact that the collector was becoming very tired and very hot. On a dry, slightly overcast day, it was worth staying till 16.00. On other days a tropical downpour might close down collecting at any time. So public transport had to be used.

This made the return from the forest every day a minor adventure. Public transport in Africa consists mainly of mini-buses, known as *tro-tros* in Ghana, which may be flagged down anywhere along the road. They serve not only as passenger transport but are also the main means of transporting agricultural produce and domestic animals to market. And they are almost always full to capacity.

Their mechanical condition is usually distinctly wonky. In fact, virtually everything not absolutely necessary is missing. It is often impossible to identify the make of vehicle — Toyota Hiace is the default category. Never mind how decrepit, no *tro-tro* is complete without a freshly painted slogan on the back, of various levels of sophistication and interpretability. LET THEM SAY is a common one, and so is NO TIME TO DIE. Ghana is a poor country, so slogans such as BE CONTENT WITH YOUR LOT are frequent, as are religious ones such as THE LORD IS MY SHEPHERD or GOD KNOWS WHY (I have seen them combined, which does not work well). More cynical souls might have slogans along the lines of MONEY RULES ALL and POOR NO FRIEND, and though others may deny it, one of my *tro-tros* proclaimed with great honesty: MONEY IS THE ROOT OF ALL JOY. Everyone in Ghana has favourite slogan — mine is the wonderfully ambiguous "GO LIKE HELL AND YOU WILL GET THERE".

The trip by taxi to the forest in the morning lasted just 20 minutes. The return journey lasted rather more. I did once make make it back in 40

minutes, but an hour or even two was more usual, if for no other reason that you stop to take on and put off passengers everywhere. It is a supposed truism (with no statistical support) that buttered bread always falls butter side down. If, in Ghana, you have just stopped to take on a new passenger with eight sacks of cassava, you can be quite sure that three minutes later the guy who has the four baskets of palm-oil seeds will want to get off. So the eight sacks of cassava have to be unloaded, then the palm-oil, and finally the cassava has to go up again.

There are many memories from specific trips. On one a trussed goat was under my seat, but it was still able to butt, and every time it did so it hit my — shall we say . . . . no, let's be honest — balls. Not all that hard, but then it doesn't *have* to be very hard. There also was the ride where the old lady's sacks of cocoyam (taro) kept falling off with an audible thud. Each time the sacks got roughed up more, more cocoyams spilled out, and they got roughed up too. No wonder she became increasingly indignant, garnering enough support from the passengers after the fifth spillage to have her ticket cost waived.

The noises of the indignant cocoyam woman were nothing against another trip where two groups of market-women were at odds. They outnumbered me and two other men by twenty to three (twenty-five people

Well . . . in this case HE did not.

in a *tro-tro* is not a lot). The level of noise was almost unbelievable. We were reduced to communicating through the cacophony by sight and shrugging of shoulders, and — honestly (!) — there was nothing sexist in our communication.

So, such are the hazards of public transport in Ghana, but it does get you to Cape Coast in the end. With a ride of about 35km for the princely sum of 35 pence. And do remember (another common slogan): WHATEVER YOU DO PEOPLE WILL TALK OF YOU.— T.B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

Two species of Micro-lepidoptera new to the Isle of Wight

On looking through my collection Barry Goater identified a specimen of *Dioryctria schuetzeella* (Fuchs.) amongst my series of *Dioryctria mutatella* (Fuchs.) which was taken at mercury vapour light at Freshwater on 14th July 1985. This is new to both Hampshire and the Isle of Wight.

My brother, Dr R.P. Knill-Jones also identified a specimen of *Cryptophlebia leucotreta* (Meyr.) which was found resting on a curtain in my sitting room at Freshwater on 29th September 1989. This is an imported species which feeds on oranges and is the first record for the Isle of Wight.— S.A. KNILL-JONES, Roundstone, 2 School Green Road, Freshwater, Isle of Wight.

On the gender of three generic names in Coleoptera

I have already (1993) had occasion to notice a recent tendency to make the name *Cicones* feminine, contrary to both classical origin and established tradition. I now draw attention to three further cases of unwarrantable change of gender of well-known names in current British works.

1. *Amphimallon:* the neuter of a late Greek adjective meaning "woolly both sides" (masc. & fem. ending *-os.*); *A. solstitiale* and *A. ochraceum* therefore are correct. The masculine usage is simply a hang-over from the previously used combinations *Amphimallus* (or *Rhizotrogus*) *solstitialis* and *A. ochraceus.* (Pope, p.45; Jessop. p.28; Hyman & Parsons, p.383.)
2. *Catops:* a name always, in our literature at least, treated as feminine up to around 1930 when (probably following the European Catalogue of 1906) it was altered to masculine, which has remained usual ever since. However, the Greek *ops* "eye, face" is feminine, thus vindicating the older usage. *Catops,* incidentally (from *kato-ops*), should signify "(with) eyes below", but is of obscure application.
3. *Platycis:* as far back as 1955 I pointed out that the earlier-used *P. minutus* was right and the later-used *P. minuta* wrong; and that the second element of the name can only be the Greek *kis* "woodworm", which is masculine — as in the generic name *Cis.* Pope (p.52) this time

has the correct gender, so it is hard to see why in Hyman & Parsons (p.346) the name should have reverted once more to the indefensible *P. minuta*.

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— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Incidence of Codling Moth (*Cydia pomonella* L.) (Lep.: Tortricidae) in a Sussex Garden, 1993

It seems worthwhile to record the results of a third year of pheromone trapping on our two garden apple trees (Cox and Bramley), because this year there was a substantial drop in the numbers of males caught, after the very prolific previous year.

The total in 1991 was 76 (*Ent. Rec.* **104**: 185), and in 1992 it was 432 (*Ent. Rec.* **105**: 196-197). In 1993, 91 were trapped.

The trap went up on 15th May, the pheromone capsule was replaced on 17th June, and the trap was taken down on 30th August.

The trees were sprayed with dimethoate on 14th June and 8th July.

There was a large crop of apples about 415 Bramleys, mostly large, and 550 Coxes, many small but tasty. Infestation with codling larvae was negligible.

The daily record of males trapped was as follows:-

May		June		July		August	
23rd	1	2nd	2	1st	2	2nd	1
24th	1	3rd	2	3rd	4	11th	1
25th	3	4th	3	4th	5		
		5th	7	5th	2		
		6th	7	8th	3		
		7th	6	15th	1		
		8th	2	21st	2		
		13th	1				
		18th to 28th	35				

R.C. DENING, 20 Vincent Road, Selsey, West Sussex PO20 9DQ.

***Carpelimus similis* (Smet.) (Col.: Staphylinidae) in S.E. London**

My first example of this lately-detected species (see Hyman & Parsons, 1944, *A review of the scarce and threatened Coleoptera of Great Britain,* 2: 127), was found crawling on damp soil on a bank of the River Quaggy at

Kidbrooke in this district, on 24.vii.1965. I had not myself separated it from the extremely similar *C. bilineatus* Steph. but Mr P.M. Hammond kindly identified it (1980) as above, on the basis of the pronotal sculpture and the aedeagus. Hyman & Parsons class the species as notable and very local, centred in the south; see also Owen, 1993, *Coleopterist* **2**(1):5. I took a second specimen of *C. similis* here at Charlton, at mercury-vapour light, 8.viii.92 (a frequent resort of *C. bilineatus*).— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Early emergence of spring moths

In this part of Hampshire, several species of non-hibernatory spring moths have made very early first appearances:-

	1994	**1993**	**1992**	**MBGBI imago**
Theria primaria	9 Jan	29 Jan	6 Feb	Jan, Feb
Apocheima pilosaria	12 Jan	26 Dec (1992)	14 Feb	Jan, Feb
Orthosia gothica	31 Jan	29 Jan	3 Mar	Mar, May
Alsophila aescularia	4 Feb	15 Feb	26 Feb	Mar. Apr
Biston strataria	4 Feb	13 Mar	29 Feb	Mar, Apr
Agriopis leucophearia	4 Feb	29 Jan	none	Feb, Mar
Orthosia cerasi	8 Feb	11 Mar	7 Mar	Mar-May
Agriopis marginaria	10 Feb	15 Feb	29 Feb	Feb-May

It would be interesting to know whether other readers have made similar observations. It is possible that emergence dates could be useful indicators of climatic change.

Reference: Emmet, A.M., 1991. Chapter 3, Volume 7(2), *The Moths and Butterflies of Great Britain and Ireland*, Harley Books, Colchester.—, ALASDAIR ASTON, Wake's Cottage, Selbourne, Hampshire GU34 3JH.

Fannia collini Fonseca (Diptera: Fanniidae) in West Kent

Fonseca 1968 (*Handbk ident. Br. Insects* vol. X part 4b) stated that *Fannia collini* was known from only Farley Down and Matley Bog in Hampshire. Falk, 1991 (*A review of the scarce and threatened flies of Great Britain*) gives the species *Red Data Book* K status, meaning that its distribution is imperfectly known. During a Kent Field Club survey of Chiddingstone Ponds reserve, near Tonbridge (51/5149) on 18.vii.1993 I obtained a single male *collini* along with numbers of the more generally distributed *Fannia armata, coracina, polychaeta, rondanii* and *umbrosa*. The site, which is managed by the Kent Trust for Nature Conservation, contains several damp flushes and is in parts heavily wooded. It was not, however, possible to ascertain exactly where the specimen was taken.— LAURENCE CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

Agathomyia falleni (Zetterstedt) (Diptera: Platypezidae) in East Kent

Chandler, 1973 (*Trans. Kent Field Club* vol.5 (i)) gave details of captures of *Agathomyia falleni* from the western part of the county. The first Kent specimens were taken from Knole Park, Sevenoaks on 9.x.1966 and a further male was obtained at Pond Wood, Chislehurst on 30.ix.1967. Mr Chandler subsequently took a single male and female at Scadbury Park, Chislehurst on 22.x.1993 and 3.xi.1984 (pers. comm.). On 10.x.1992 I obtained a single male of this species during general sweeping for diptera at Aylesford Old Pit, near Maidstone (51/735 592). The species is currently listed as *Red Data Book* 3 by Falk, 1991 (*A review of the scarce and threatened flies of Great Britain*) and is known to be associated with the fungus *Bjerkandera adusta* (Willd.ex Fr) Karst.— LAURENCE CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

Monmouthshire Lepidoptera: the Butterflies and Moths of Gwent by **Dr. G.A. Neil Horton.** 352pp., 27 coloured and other plates. 1994. Obtainable from Images Ltd., 19 High Street, Upton-upon-Severn, Worcs WR8 0HJ. Price £26.75.

This fine county list is the first definitive work to be published on the lepidoptera of Monmouthshire, and covers the whole Order. Altogether 1164 species are treated comprising 588 macrolepidoptera and 576 microlepidoptera.

The first 27 pages include an account of the topography of the county, together with details of the more interesting or local specialities, migrants, vagrants, extinct species and historic recording in Monmouthshire. Then follows the main part of the work — the Systematic List. In this are treated the butterflies (pp. 31-58), macrolepidoptera moths (pp. 59-224) and microlepidoptera (pp. 225-311). A bibliography (of 101 titles), national grid references and abbreviations of authors' names follows. The work concludes with two indices: one of English names (pp. 326-332) and one of scientific names (pp. 333-351).

The 18 coloured photographic plates of habitats are of superb quality, but the remaining nine which include 125 figures of set specimens, all from the author's own collection, are somewhat marred by background shadows.

The author states (p. 27) that "larval foodplants have only been named when they have actually been noted as such within the county". This is most laudable and one wishes that the authors of many other local lists would follow this course.

We should have liked mention of at least localities and dates in the case of a number of species lacking essential data. This is especially so with many MBGBI species where only "Monmouthshire" appears. However, on the whole, documentation is excellent, and presentation of the records is admirable.

Paper and printing are of good quality, and the book is strongly cased in an attractive hard cover.— J.M. CHALMERS-HUNT.

Ground Beetles in the Yorkshire Museum by **Michael Denton.** 83pp. A5. The Yorkshire Museum, Museum Gardens, Yorks YO1 2DR; free on receipt of s.a.e.

This booklet provides an annotated list of the British ground beetles (Carabidae) in the Ellis Collection at the Yorkshire Museum, together with a history of the collection and a brief biography of H.W. Ellis. The ground beetles are part of a vast collection (90,000+) of coleoptera assembled by Ellis, which bear the names of about 80 different collectors. About 90% of the British carabidae are represented. For each of the British species, there is an entry giving a brief comment on the species together with the numbers of examples of each species present in the collection. These range from one to 267. This numerical data will be of value to specialists contemplating a visit to the Museum for study purposes. Entomologists more concerned with faunal distribution would have wished a complete listing of the specimen data but this would have been a mammoth task. A minor criticism concerns the comments given on the British status of most of the species. This appears to have been taken largely from the UK JNCC publication *A review of the scarce and threatened Coleoptera of Great Britain Part 1 1992* P. Hyman, revised and updated by M. Parsons. One wonders if it was really necessary to reproduce the information given in this readily available publication.— JOHN OWEN.

Butterflies on British Islands

Records of butterflies for the smaller British islands are being compiled by Dr Roger Dennis at 4 Fairfax Drive, Wilmslow, Cheshire SK9 6EY. Any contributions will be most welcome. Together with a note of species, please provide information, if possible, on sex, precise locality, date, and the presence or absence of hostplants.

Microlepidoptera of Middlesex: An appeal for records

Following on from the success of the recent publication of *Larger Moths of the London Area* the London Natural History Society now proposes to work towards publication of a checklist of the microlepidoptera of Middlesex. It is expected that this exercise may take about five years to complete.

The term Middlesex involves the entire Vice-county 21 and thus includes all the London boroughs north of the River Thames with the exception of the five lying east of the River Lea; these five are in south Essex. Middlesex also incorporates some areas which lie in the current administrative county of Hertfordshire, notably the Potters Bar area. Records are actively sought from appropriate persons for all those families generally regarded as "micros" — thus including the Psychidae which were formerly referred to the "macros", as well as those which are sometimes referred to as "meso-lepidoptera" (Tortricidae, Alucitidae, Pyralidae and Pterophoridae).

Records should include the species name, the Bradley and Fletcher Code number (to avoid nomenclatural confusion) the date where possible and the locality. Records will be assumed to relate to imagines unless "mine", "larva" or other qualifying statements are given alongside. Localities will ideally involve a place name and a four figure grid reference. Place names should be those appearing on the Ordnance Survey maps; precise localities, such as the names of nature areas or ecology parks in London are desirable, but if these do not appear on OS maps the nearest locality should always be given. Where a grid reference cannot be obtained, a precise address as it appears in one of the various published books of street maps of London should be used. Site lists will ideally be presented in Log Book order to facilitate data entry. Overnight trap dates should be given according to the example 23/24 August or 23 August, and not as 24 August. Approximate counts and sexes are desirable for immigrants. Confidentiality of selected records may be requested. Records are required from all time, not just the present period.

Records should be addressed to The London Natural History Society's Lepidoptera Recorder, Colin W. Plant, at The Visitor Centre, East Ham Local Nature Reserve, Norman Road, London E6 4HN who will happily provide more detailed information. All communications will be acknowledged and records from outside Middlesex contained in mixed lists will always be forwarded to appropriate Recorders unless directions are given to the contrary.

HELP WANTED

Records of sites/species of invertebrate conservation importance wanted for the Peak District National Park: must be site-specific and significant. If you hold any useful records please contact RHODRI THOMAS, Ecologist, Peak Park Joint Planning Board, Aldern House, Bakewell, Derbyshire DE45 1AE. (Telephone: 0629 814321.)

CONTRIBUTIONS

Readers are reminded that they are the main source of material for the Journal. **We urgently need papers, notes and observations for publication, particularly on British and European Lepidoptera, Coleoptera and other orders. Please see the inside front cover for details of how to contribute.**

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION
(Founded by J.W. TUTT on 15th April 1890)

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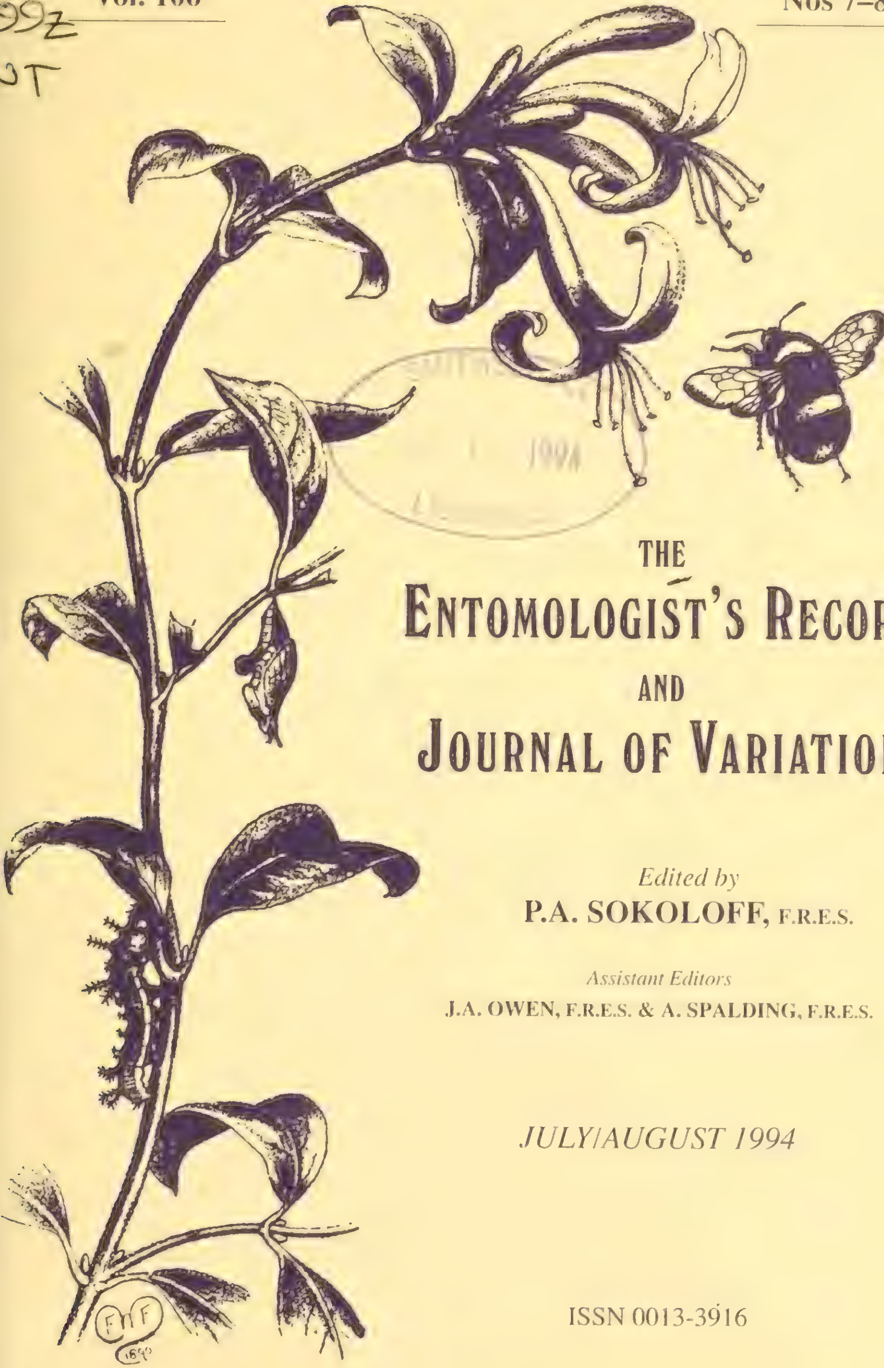
SPECIAL NOTICE. The Editor would be willing to consider the purchase of a limited number of back issues.

Printed in England by
Cravitz Printing Company Limited, 1 Tower Hill, Brentwood, Essex CM14 4TA. Tel.: 0277-224610.

PUBLISHED BI-MONTHLY

Vol. 106

Nos 7–8



THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

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JULY/AUGUST 1994

ISSN 0013-3916

THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

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It would greatly help the Editor if material submitted for publication were typed and double spaced. Two copies are preferred. Please DO NOT use block capitals and DO NOT underline anything except scientific names. Word-processed text should not use italic, bold or compressed typeface. References quoted within the text can be abbreviated (eg Ent. Rec.), but those collected at the end of a paper should follow the standard *World List* abbreviations (eg Entomologist's Rec. J. Var.). When in doubt try to follow the style and format of material found in a current issue of the *Record*.

Illustrations must be the original (not a photocopy) without legend which should be typed on a separate copy. Photographs should be glossy, positive prints. Authors of long papers, or submitting valuable originals are advised to contact the Editor first.

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VANESSA ATALANTA L. (LEP.: NYMPHALIDAE): SOME COMMENTS ON OVERWINTERING

BRIAN K. WEST

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ON 22nd DECEMBER 1982 I noticed a specimen of the Red Admiral butterfly resting about 18 inches from the ground on an east-facing white wall at Bexleyheath, Kent; it was still in place on the 24th, but was gone by the 28th, having been settled in a most conspicuous and inappropriate place. Plant (1971) gives no December records for the London area, nor of successful overwintering. Chalmers-Hunt (1961) quotes four examples of the butterfly "hibernating", although only one, that of a female found together with two *Inachis io* L. and two *Aglais urticae* L. which were clinging to woodwork beneath some slates of a house in February 1907, stands up to scrutiny; even so, mid-February is mid-winter, with some time to go before sallow blossom time. Unfortunately this observation has no sequel. This, and the Bexleyheath specimen were probably of local origin; the annual review of migrant lepidoptera by Bretherton and Chalmers-Hunt (1983) states that the few *atalanta* which continued into December were probably local bred.

A probable interesting coincidence not previously reported concerns the sighting of *atalanta* in the same small clearing in the local woodland in April in the four consecutive years 1978 to 1981. This clearing contains beds of stinging nettles (*Urtica dioica*) and the odd larva of *atalanta* has been found on them over the years. Although each year several sightings were made, there was no evidence that more than one specimen was involved each year. What is curious is that the species was not encountered anywhere else. According to the annual review in this journal for the relevant years regarding migrants, 1978 was not a good year, and immigrants were rarely seen before June. In 1979 a small immigration of *atalanta* was recorded in April in Devon and Cornwall; in 1980 immigrant *atalanta* were seen in Sussex in early April, while there were other records for the butterfly in Kent in both March and April. In 1981 several probable immigrants were reported for March and April, plus that of a specimen "hibernating in a room in Orkney in February", an interesting observation, but lacking a sequel, and also the assurance that the specimen was in fact alive. This latter point is important; one of several hibernating *Aglais urticae* L. observed in a room in my house in 1993 remained in place into June, but was deceased.

I believe Lempke (1971) accurately summarises the position in north-west Kent when writing of overwintering and migration of *atalanta* in western Europe, suggesting:-

a) It does not enter into diapause.
b) Sunshine, even at low temperatures, activates it.
c) Specimens overwintering in buildings do not survive.
d) It can only successfully overwinter with feeding.

To add to this L.W. Newman (1911) noted that he could only overwinter the species by keeping it in a frost-free room and feeding the butterflies regularly. Therefore some of the sightings in south-west England, and perhaps elsewhere, may well be examples of successful overwintering, but not hibernating in the strict sense; this view is I believe the generally accepted one today.

I suspect that a somewhat similar inconclusive situation exists in North America; textbooks refer to hibernation and overwintering as though the words are synonymous. Harris (1972) notes that the fall brood overwinters either as pupae or adults in Georgia. For Oregon, Dornfield (1980) states that *atalanta* is multi-brooded flying from April to November, and even on warm days in winter since fall-hatching butterflies can overwinter in protected hiding places. Ferris and Brown (1980) for the Rocky Mountain States also accept the winter may be passed in either the adult or pupal state, and the term "hibernate" is used; in view of so much of the region being over 4,000 feet altitude with severe winters, passing this period without diapause seems unlikely; however, migrants, sometimes in large numbers appear in spring. Scott (1986) referring to the whole of North America states that adults (and doubtfully pupae) hibernate, thus contradicting other authorities. I would have thought it not difficult to settle the question of overwintering of pupae!

A relevant fact that I have not seen mentioned is that all the British Nymphalids which hibernate, although possessing brightly-coloured upperside, have exceedingly dull, blackish undersides with a distinctive pattern of numerous striations, well-suited to their winter environment whilst resting with wings closed. *V. atalanta* has a quite different underside colour and pattern, one found commonly among non-hibernating tropical Nymphalids.

Precis octavia Cram. is a common butterfly in many parts of Africa, often visiting gardens; the summer (wet season) form is bright pink with black markings, but the winter form (dry season) is largely deep blue, and whereas the underside of the summer form is similar to the upperside, the winter form has an underside not unlike that of the true hibernators among the British Nymphalids, more so indeed than those of the blackish species of *Precis* such as *P. stygia* Aur. which retain a leaf-like pattern. However, the winter form of *P. octavia* has the habit of hiding in dark buildings, burrows, caves and overhangs (Swanepoel, 1953). Presumably, there is no diapause, for when disturbed I find they readily take flight.

A further interesting case of this cryptic underside pattern and colour I found whilst living in the Cameron Highlands, Malaya, at an elevation of over 5,000 feet, for there I encountered a butterfly resembling a large *Polygonia c-album* L. with the ground colour deep blue, *Kaniska canace* L. (formerly *Polygonia*); its underside is almost identical with that of *Inachis io*. However, in Malaya it does not hibernate; there is just a succession of broods; it is one of the Indo-Chinese group of species which arrived from the north, and also inhabits Hokkaido, the most northerly island of Japan, where

it hibernates for about eight months (Yokoyama, 1953). Although it has several subspecies they all retain the special cryptic underside so well-adapted for resting in dark places.

Thus, in conclusion, it seems that *V. atalanta*, by virtue of its underside pattern and coloration is a species not adapted for hibernation in the dark places frequented by certain other Nymphalids fairly closely related to it. Although it is now generally accepted that the insect may overwinter in the mild conditions of south-west England, I believe the evidence is purely circumstantial; I can find no record of a recognisably-marked specimen being observed on numerous occasions from December to late March or April. Its ability to survive the winter of the London area seems more remote, but might be feasible under conditions which permit late summer and autumn flowers to continue into December combined with a very early spring with mild, sunny periods enabling the butterfly to feed at such flowers as coltsfoot (*Tussilago farfara*), laurustinus (*Viburnum tinus*) and ornamental cultivars of *Prunus*, followed by sallow blossom (*Salix* species) in late February and early March, and blackthorn blossom (*Prunus spinosa*) a month later.

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Eagira conspicillaris (Linn.) (Lep.: Noctuidae) – observations of the behaviour of newly hatched larvae and records of alternative foodplants

The occurrence of batches of ova of this species on the dead flower spikes of dock is well documented. With this in mind, and after a night (5th May) in which all seven seen at m.v. were males, a search was made at dawn in a well known site near Ross-on-Wye. In addition to finding a female, form *melaleuca* View., at rest on the proverbial fence-post (looking so much like a flake of wood that even though I was looking for the species I almost passed it by), three egg batches were discovered on the top of old inflorescences of Dock (*Rumex* species). Only one of these was conspicuously white, the other two being brownish-purple in hue.

When they hatched, a spectacular escape bid was mounted. Creeping through the mesh of the netting cage they ascended to the highest parts of the

bookcase and launched themselves off on silken strands. They absailed down the furniture but climbed up again when realighting. Although small, they were in such numbers as to present a very impressive sight with up to five positioned on one thread at intervals reminiscent of mountaineers attempting a tricky ascent. (A slightly different view of these antics was taken by my wife!)

A large batch of ova may present a gamble in terms of survival especially if the larvae all remain together; some form of dispersal would reduce the chance of heavy parasitism or predation after hatching. Interestingly one of the batches produced large numbers of parasites and no larvae at all. The polyphagous habits of the larvae would be an advantage to a species that disperses in such a manner as larvae may encounter a wide variety of foodplants on landing. If this species were only able to accept a narrow range of pabula only the few that by chance landed on their particular foodplant would have any chance of survival.

Considering that the imago, a robust Noctuid, has powers of dispersal that are far in excess than those of the larvae it would seem that the observed behaviour represents a strategy for avoiding excessive larval loss rather than a means of extending the range of the species. However, spiderlings are known to travel vast distances and be carried in high altitude airstreams and there seems no reason why, in theory, tiny newly hatched larvae could not cover significant distances in this way. It would be interesting to observe newly hatched larvae of species with wingless females as this mechanism would be of much more significance in dispersing a species in which the female is unable to move by any other means than crawling.

Initially the larvae fed avidly on dock but accepted a large range of other foodplants including: Blackthorn – *Prunus spinosa*
Hawthorn – *Crategus*
Lime – *Tilia*
Willow – *Salix*
Privet – *Ligustrum ovalifolium*
Oak – *Quercus*
Nettle – *Urtica dioica*
Dandelion – *Taxacarum officinale*
Plantain – *Plantago* species
Various grasses
Aspen – *Popula tremula*
Honeysuckle – *Lonicera*

Two larvae were inadvertently left in a box containing the remaining ova and no foodplant was included. Thus some surprise was occasioned by the discovery of two healthy second instar larvae. The mystery was solved when they were observed feeding on the unhatched ova, starting at the point of maximum curvature and enlarging the hole until the head capsule was able to squeeze into the cavity of the egg to consume the contents.– Dr Julian Clarke, Oaklea, Felcourt Road, Lingfield, Surrey RH7 6NF.

HYPOSOTER SP. OF PARASITOID WASP (ICHNEUMONIDAE: CAMPOPLEGINAE) REARED FROM WILD LARVA OF REDDISH BUFF MOTH *ACOSMETIA CALIGINOSA* (LEP.: NOCTUIDAE) FROM THE ISLE OF WIGHT

PAUL WARING

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ON 21st JULY 1993 a small larva of *A. caliginosa* was collected from the Isle of Wight for rearing as part of English Nature's Species Recovery Programme for this protected species (Waring 1990, 1993, 1994). From this larva a single grub of a wasp emerged on 24th July and proceeded to spin a cocoon by the corpse of the host. As an indication of the development stage of the host, the head capsule measured 1mm across at the widest point and the caterpillar was 15mm in length. It was probably no more than third instar. The cocoon of the parasitoid was off-white like dirty wool. It was kept in a plastic box at outside temperatures. Initially the cocoon was inspected frequently but as the adult insect had not emerged by 27th September 1993, it was assumed the pupa would overwinter and the adult would emerge to attack larvae the following season. However, when the cocoon was inspected in mid-November 1993, a black wasp was found to have emerged and died. This was identified as a *Hypersoter* species by Dr Mark Shaw, Royal Museum of Scotland, Edinburgh. Dr Shaw informs me that it is difficult to identify wasps of this group to species at present due to taxonomic problems within the genus.

I am not aware of any previous records of parasitoids from *A. caliginosa* in Britain. Dr Shaw tells me that the *Hypersoter* species which make the above "bird-dropping type" cocoons tend to have wide host ranges and this, together with emergence of the adult in the autumn, when larvae of *A. caliginosa* have long since pupated below ground, suggests the wasp is unlikely to be specific to this moth. Most likely the wasp attacks other noctuid larvae which occur in the same open sward over the winter, such as those of the Square-spot Rustic *Xestia xanthographa*.

Parasitoids can be an important influence on the population dynamics of host species and it is possible that the population size of *A. caliginosa* may be influenced by the activities of this wasp, even though the latter appears not to be a specialist on this host.

The wasp, its cocoon and the remains of the host have been deposited with Dr Shaw at the museum in Edinburgh.

Acknowledgments

I would like to thank Dr Shaw for identifying the parasitoid and the owners of the site for their co-operation with the project. The work is funded as part of English Nature's Species Recovery Programme.

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Poplar Hawkmoths in Cornwall

Following B.K. West's recent article in *Ent. Rec.* **106**: 41-45, where he considered whether the Poplar Hawkmoth is univoltine or bivoltine in Britain, I decided to look at the records for this common and widespread species in Cornwall. We have 158 records of this species at the Cornish Biological Records Unit, most of which are for one sighting only. The earliest record is by W. Noye at Lands End in May 1846, the latest is by R.J. Heckford at m.v. light on 13th August 1993 at Kennack Sands. Of these records, 109 are dated precisely and their distribution throughout the year is illustrated in the accompanying graph, where each month is divided into four weekly sections. There is a clear peak in July, with 59 moths (54% of the total) recorded, out of which 38 (35%) were recorded between 8th and 23rd July. The earliest records are for early May (apart from a freak February record in 1986), from whence there is a fairly steady rise in numbers to mid-July, followed by a rapid decline. This suggests that there is single brood with a prolonged emergence during this period, but the isolated individuals recorded at the end of August and more particularly in late September and early October suggest that (in some years at least) there is a partial second brood.–Adrian Spalding, Cornish Biological Records Unit, Institute of Cornish Studies, Trevenson Road, Pool, Cornwall TR15 3PL.

Poplar Hawkmoths in Cornwall 1846-1993, showing the numbers of moths recorded weekly from May to early October.

ENCRUSTED BUT UNENCUMBERED – CAKED MUD DOES NOT NECESSARILY IMPEDE A BEETLE'S ABILITY TO FLY

RICHARD A. JONES

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THE AERODYNAMICS of beetle flight are only vaguely understood. Perched on a suitable vantage point, the winged-cases are flung back, the delicate membranous flight wings are extended, the wings beat and the creature is lifted into the air. In most species the elytra are held out at right angles to the body the whole time the beetle is on the wing. In a few, notably the Rose Chafer *Cetonia aurata* (Linnaeus), the flight wings are able to beat while the elytra are closed back over the insect's abdomen. Air flow over the body, whether with elytra in or out, will control the insect's ability to rise, fall and steer. Whatever the mechanism of flight or aerial control, it would seem logical that any impediment to the body would prevent, or at least influence, the creature's ability to fly properly. However, observation of a chafer partly encrusted with earth shows that this is not necessarily the case.

On 19th June 1993, the pretty little downland chafer, *Omaloplia ruricola* (Fabricius) was moderately common, flying over the steep, sheep-grazed chalk slopes of Mount Caburn, Lewes, East Sussex. Both Fowler (1890) and Joy (1932) regarded this species (formerly *Homoloplia ruricola*) as very local and rare. However, Fowler quotes a poignant remark made by C.O. Waterhouse that finding an abundance of a "rare" species at a particular spot and at a particular time suggests that it really ought to be considered only "local". Hyman and Parsons (1992) have duly reduced the beetle's status to "notable b". The beetle is almost "common" in several parts of the South Downs of Sussex.

O. ruricola has several colour forms. The typical beetle is black, with each elytron extensively bright orange-brown on the disc. The size and depth of the orange patches vary and occasionally a beetle is entirely black. The two extremes of this spectrum can be readily spotted and identified on the wing, and on the warm sunny day in June several "light" and "dark"-forms were flying about over the flowery downland turf.

Suddenly one appeared which had a somewhat different appearance; as it flew it seemed spotted with white. When it landed, the cause was immediately seen to be a thick encrusted layer of chalky material on the thorax (Fig. 1). The beetle climbed about aggressively in the herbage. It scrambled to the tip of a leaf and after a few minutes, unperturbed by its crusty coat, it opened its wings and took off again.

How it came by its unusual integument is open to speculation. The larvae of *Omaloplia* are subterranean, hence one can only assume that the adult emerged on a less than clement day and that it became muddied as it struggled to clear the pupal cell.

Fig. 1. *Omaloplia ruricola,* Mount Caburn, Lewes, East Sussex, 19th June 1993; even with its thorax encrusted with chalky earth, the beetle is unencumbered. Shortly after this photograph was taken it stuck out its wing cases, flapped out its wings and launched itself off into the sky. *Photo: R.A. Jones.*

Beetles groom themselves with their legs, front legs for the head and antennae, hind legs for elytra and abdomen. And in order to keep active and free of constraint beetles frequently engage in grooming. Only a few flightless weevils such as *Trachyphloeus* do not keep their upper surfaces clean, the coating of soil and rock granules adding to their already cryptic colouring and form. Even dung beetles do not allow their bodies to become soiled though they have chosen the stickiest medium in which to live.

However, in this case, the chalky thorax did not obviously affect the insect's ability to fly. The *Omaloplia* may have compromised on cleanliness and given up after ridding the more important areas, its head and wing cases, of mud.

In a recent communication to this journal (Jones, 1994), I took the liberty of describing the strange faecal habits of various leaf beetles, expounding on the use of the word "merdigery" meaning dung-carrying. On this occasion however, I will exercise restraint and not dwell on the possibility of "mudigery" in this chafer.

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EPIPHYAS POSTVITTANA (WALKER) (LEP.: TORTRICIDAE) IN CORNWALL

Adrian Spalding

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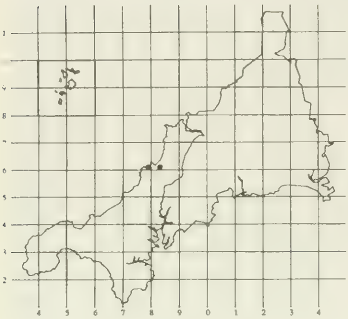
THE SPREAD of this moth from the first records in Cornwall across the southern counties of England has been well documented in the entomological literature, from Meyrick (1937) onwards. Baker (1968) provided maps showing its spread through England. More recently, David Agassiz has worked on the rate of spread for this (and other) species through Britain and come up with much new (unpublished) information. This short paper is an attempt to provide more detail about this moth in Cornwall. Maps are included to show its changing distribution over the years based on the 221 records for this species held on the computer database at the Cornwall Biological Records Unit. For this purpose, a record is one notification of this species in one place over a period of time (usually a single day, but sometimes longer) and may refer to several sightings. Information from this database is available for anyone doing research on the wildlife of Cornwall and the Isles of Scilly.

It is well known that *Epiphyas postvittana* is a native of Australia, where it is a serious orchard pest (Bradley, Tremewan & Smith, 1973). Meyrick (1937) gives the first record for Britain (repeated in Bradley *et al*) as Newquay in 1936 where it was found as larvae quite abundantly on an *Euonymus* hedge by F.C. Woodbridge. He bred out four Tortrices, three of which he sent to Meyrick for identification. With great foresight, Meyrick writes that "I think it will find no climatic obstacle to maintaining its ground in Devon and Cornwall". He adds that its rapid multiplication is probably due to the fact that it has not brought any of its parasitic enemies along with it.

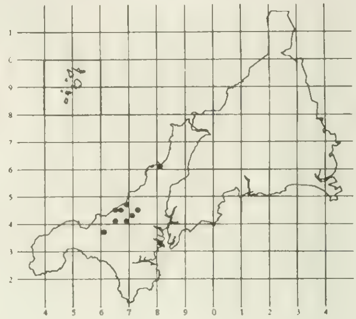
In fact, the first record I can find for Cornwall is for the spring of 1933, when Dr F.A. Turk reported a heavy infestation on two trees (including a Bramley apple) of the larvae of *E. postvittana* at Roscroggan, Camborne. Dr Turk sent the larvae to C.B. Williams at Rothamstead, who provisionally identified them as this species. Meyrick mentions (without naming a place) that the caterpillar "has been found feeding in the interior of an apple", which may refer to this record.

Apart from the record at Newquay in 1936, the next record I can find is for 1939 at Pentire Point (Baker, 1968). I can find no records for the 1940s (which may show an understandable lack of recording effort during the war), but by 1961 Tremewan refers to it as "widespread and common in many localities". Since then the numbers have steadily built up over the years (Table 1). The total for the 1990s looks set to be greater than for the 1980s. The maps clearly show the spread of *Epiphyas postvittana* (adults and larvae) eastward through Cornwall.

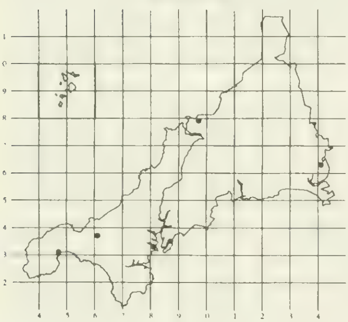
1930-39



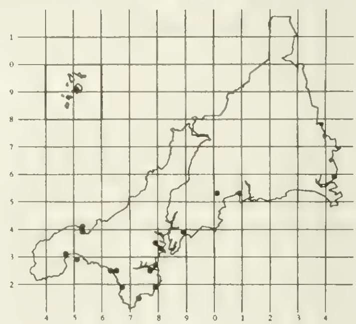
1950-59



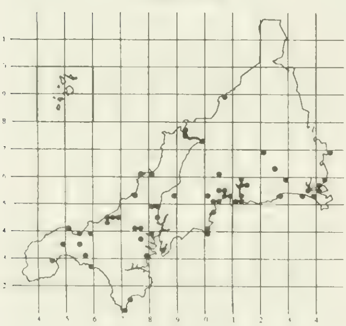
1960-69



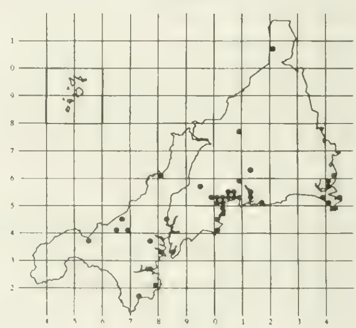
1970-79



1980-89



1990-



Epiphyas postvittana was apparently first recorded in the Isles of Scilly (on St. Mary's) on 26th May 1975 by R.J. Heckford, and David Agassiz records it as common (Agassiz, 1981). R.J. Heckford recorded it here again on 30th May 1993. (This record is not yet shown on the accompanying maps.) *Epiphyas postvittana* has also reached the small island of St. Michael's Mount, where it was recorded by Chalmers-Hunt on 8th September 1974. Records seem to be scarce in north Cornwall with records for Tintagel in 1981 by Pelham-Clinton (per Agassiz) and one record for Bude on 30th July 1991 by J.L. Gregory. The paucity of records may be due to lack of moth recorders in this area. By contrast, the concentration of post-1980 records in the St Austell area are largely the results of the activity of one recorder (J.L. Gregory) and show one of the problems of distribution maps (viz. that they show where recorders have been as well as where the species occur).

Listed associated foodplants include *Aster trifolium, Centranthus ruber, Euonymus japonica, Filipendula ulmaria, Hedera hibernica, Lavandula* sp., *Ligustrum ovalifolium, Malus domestica, Potentilla* sp., *Rosa* sp., *Rubus* sp., *Teucrium scorodonia* and *Veronica* sp., as well as a wide number of garden and house plants. Despite finding larvae on eight different plant species in Cornwall, Chalmers-Hunt (1975) failed to find larvae on *Euonymous japonica*.

At least 41 of the records are of adult moths attracted to m.v. light and there are also records of the moth at gas lamps and actinic tubes. The adult has been recorded in every month of the year, from 2nd January to 26th December (both records by Gregory). The most numerous records are for August (37), the least number for November (2) (Table 2). The low number of winter records may be more a result of low recording effort than a measure of winter abundance and this species could be continuously brooded. The highest number of individuals recorded at one time was 32 on 1st August 1976 by M.R. Shaw.

Acknowledgements

I wish to thank David Agassiz and Frank Smith (the county recorder for Cornwall) for records and information additional to those records on the database at the CBRU and to Jim Minchen who researched the database for me. This database has been devised by Colin French for the CBRU. The maps are based on the records of the following people: D. Agassiz, J.M. Chalmers-Hunt, S.H. Church, K.G.W. Evans, L.T. Ford, A.P. Foster, B. Goater, J.L. Gregory, M. Hadley, E.C.M. Haes, R.J. Heckford, H.C. Huggins, J.R. Langmaid, J. McPhail, S.C. Madge, J.E. Marshall, R.M. Mere, M.S. Parsons, R. Rogers, M.R. Shaw, A. Smith, F.H.N. Smith, A. Spalding, K.L. Spurgin, W.G. Tremewan, F.A. Turk, M.W.F. Tweedie and F.C. Woodbridge.

Table 1: Numbers of records for *Epiphyas postvittana* (adults and larvae) in Cornwall for each decade.

Decade	Number of records
1930 – 39	3
1940 – 49	0
1950 – 59	31
1960 – 69	11
1970 – 79	35
1980 – 89	83
1990 – 93	58
	Total 221

Table 2: Numbers of records for adult *Epiphyas postvittana* in Cornwall for each month.

Month	Number of records
January	5
February	5
March	7
April	9
May	12
June	23
July	16
August	35
September	24
October	13
November	2
December	3
	Total 154*

* The totals of Table 1 and 2 do not agree because some of the records on the database have not been allotted to a particular month.

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FUNCTION OF TAILS IN FLIGHT BY SOME AFRICAN LYCAENID BUTTERFLIES

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DURING A VISIT to the Republic of Togo in September 1990, I was standing one day in a little forest clearing in the Atakora Mountains when my attention was drawn to a curious phenomenon. Slowly, in a straight line, crossing the clearing at about eye level was what appeared to be a tiny drogue, whitish in colour, and unattached. Its slow deliberate passage possessed an etherial quality in the absence of a visible means of propulsion, for there was not the slightest breeze; gravity being defied! At the edge of the clearing the apparition suddenly disappeared. Careful scrutiny revealed a small Lycaenid, subsequently identified as *Hypolycaena lebona* Hew., settled upon a leaf. Later, a slightly larger, commoner species, *H. antifaunus* Westwood. was encountered; the appearance in flight and at rest of the two species was almost identical. This slow, undeviating flight is additionally interesting in view of Lycaenids of this group being noted for rapid, and often erratic flight. Larsen (1991) remarks that in a closely-related species the tails are most noticeable when the insect is in flight, and of the long-tailed species in general, that they sometimes perform aerobatics with unbelievable vigour and precision despite being aerodymatically disadvantaged by the long tails.

Hypolycaena lebona
upperside (left) and underside (right)
Enlarged

When at rest upon a leaf the butterfly's wings are held erect, and the very long tails lie together, flat upon the leaf, the 90° twist being achieved largely by the small tornal lobe of the hindwing, which in both species has a small, subsidiary eye spot, lying in the horizontal plane. The butterflies were observed at rest only in quite calm conditions, and the long tails appeared as a single, whitish streak resembling the mark frequently made by the splash of a bird dropping. Thus these long tails appear to have a useful function when the insect is both in flight and at rest. The function of the short tails in association with an eye spot has long been thought to distract a predator from more vital parts, and was recently considered by Riley and Loxdale (1988).

One of the problems of obtaining a series of many of these Lycaenids with short, filamentous tails is to get specimens not damaged in the tornal area of the hindwings, and possessing their complete set of caudal appendages: *Deudorix*, *Castalius* and *Anthene* are frequently so damaged. In contrast, *H. lebona* and the slightly larger *H. antifaunus*, I met with in Togo, even when slightly worn had the long tails intact, and usually the others also, the ones at risk seeming to be the shortest, first pair, and I encountered none with tornal damage.

Jacoona anasuja C. & R. Feld. is rare a Malayan Lycaenid with extraordinarily long, whitish, sword-like tails also emanating from vein 1b of the hindwing; when the butterfly is at rest they probably have the same appearance and function as those of *H. lebona*, rather than resemble antennae, as I think is the case with most of these long-tailed species, especially when the tails originate from vein 2, for example the common *Cheritra freja* Fab. I found in Malaya too, that usually these very long-tailed species had their long tails intact, any damage being confined to the small supplementary tails, whereas *Arhopala* species and others with a single pair of short filamentous tails were very often deficient of one or both. However, not once have I seen in Malaya the flight of a Lycaenid resemble that of *H. lebona* and *H. antifaunus* in Togo.

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***Trichoplusia ni* (Hbn.) (Lep.: Noctuidae) – a species new to the Isle of Wight**

Warm southerly winds blowing up from the Bay of Biscay caused a recent mini-migration of Lepidoptera and on 15th May 1994 I took an example of *Trichoplusia ni* (Hbn.) which is the first definite record of this species for the Isle of Wight. Other migrants taken around the same time were *Agrotis ipsilon* (Hufn.) and *Nomophila noctuella* (D. & S.).– S.A. Knill-Jones, Roundstone, 2 School Green Road, Freshwater, Isle of Wight.

ESSEX EMERALD MOTH *THETIDIA SMARAGDARIA MARITIMA* (PROUT) (LEP.: GEOMETRIDAE) IN BRITAIN – AN UPDATE, FEBRUARY 1994

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ENGLISH NATURE'S Species Recovery Programme for the endangered Essex Emerald moth *Thetidia smaragdaria* entered its second year in 1993. The results of the first year were summarised by Waring (1993a). Previous work and background information have been reported by Waring (1989a-c, 1990a-d, 1991a,b, 1992, 1993b).

The Essex Emerald moth has not been seen in the wild in Britain since the spring of 1991, when five post-hibernation larvae were found. There has been no sign of the moth at the site since, in spite of spring and autumn searches in the subsequent years. The disappearance was in the absence of any gross change in the available, but severely limited, habitat and was the end result of a decline from 56 larvae in September 1988 to less than 30 in 1989 and 1990. The moth still survives as a captive stock which was established in 1987 (Waring 1989a). This has now been used to supply larvae and adults for five separate establishment experiments, in three different parts of the former range of the moth. The remainder of the stock is proving increasingly difficult to maintain in captivity. Many females are failing to lay eggs, the others generally fail to lay anything like their potential quota of 80 - 100 eggs each, and the majority of eggs fail to hatch. Some eggs appear to be infertile but well-developed larvae have been found in others.

In 1992 the stock was divided into two batches, one in Essex and the other in Peterborough. This was the second attempt to develop separate lines which could be crossed periodically in an attempt to reduce inbreeding effects. From these larvae 40 adults were reared in 1993 in Essex, including 24 females, of which 22 had numerous opportunities for mating. Only about 100 eggs were laid however, the product of several females, and not a single egg hatched. In Peterborough, where the majority of the captive stock has always been held, 197 larvae were successfully overwintered and these produced 145 adults, though nine males and 12 females were seriously deformed. Three males and a female appeared in fine condition but died within 24 hours of emergence. The remaining 21 looked to be healthy and many had a good adult life-span of over ten days and up to 17 days. Some were taken back to their natural salt-marsh habitat for the experiments described below. Although over 800 eggs were laid in Peterborough, only 226 larvae resulted. These are hibernating out of doors at the time of writing, as in previous years, and have had to cope with the factors which cause winter mortality. This is the first year since the stock was established, in which the number of larvae produced in captivity has been less than the previous year, using similar equipment and techniques.

In 1992 when larvae were released into the wild, some completed develop-ment successfully, and free-flying adults were produced but there was no sign of any offspring (Waring 1993a). During the work in 1993, adult moths were taken to the site to observe their behaviour, which it was hoped would include mating and egg-laying. Netting cages were set up on the saltmarsh, into which adults were released for observation. Each cage was over eight cubic metres in volume and was fitted with a 60W red light to enable the moths to be watched throughout the night without disturbing them unduly. Moths are not very sensitive to red light. Two cages were manned throughout the night on three separate nights. Each cage contained a freshly-emerged virgin male and virgin female and a male and female which had been caged with other males and females for two or three days until eggs began to be laid. The latter moths had ample opportunities for mating during this period and in some cases mating pairs were seen. The main results from the observation sessions on the coast were that both types of female spent most of the night either at rest or in the position associated with the release of pheromones to attract males. This activity involves exposing a scent organ at the tip of the abdomen and holding the wings away from the body slightly.

The females were obviously expecting to attract males during the night but the males disappointed them. The males spent most of the time at rest although some flight was noted on nine out of the twelve male moth-nights of observations. Activity was extremely limited and only two males showed sustained flights of over one minute duration. These flights were sufficiently strong that they would have taken the males well away from the females and the available habitat had they not been caged. Other flights were of shorter duration and occurred intermittently through the night. The males were more inclined to walk over the vegetation than fly. Only three of the flights and walks resulted in males approaching females, only one approached to within 5cm and no mating took place during any of these sessions.

During the six man-nights of observation only five eggs were laid. Three of these were laid by an experienced female and two by a fresh virgin, despite the fact that some of the females had commenced egg-laying before being taken to the coast and others mated or laid eggs subsequently in Peterborough. In a subsequent experiment a total of ten females and eight males were caged over the larval foodplant on the saltmarsh for extended periods of from two to five days and nights. Only 16 eggs were laid and only six hatched, so the adults even failed to replace themselves with the same number of offspring.

Could the lack of activity be blamed on the weather? The experiments took place in late June which was rather cool and dull. None of the nights of observation were very windy and there was no heavy rain, which might have deterred the moths, but night temperatures were not high. The warmest night was 15°C at dusk falling to a minimum of 13°C and the coldest was 8°C at dusk falling to a chilly 6°C. Generally it was a poor season for moth activity, with most species being seen in small numbers, presumably related to the

dismal weather. Perhaps the poor performance of the Essex Emerald and other species can be blamed on failure to reach certain temperature thresholds. A test proposed for 1994 is to rear some individuals at raised temperatures during parts of their life-cycle to see if this has any effect.

However, the reproductive rate of the Essex Emerald is now so low that the species runs the risk of being unable to survive and multiply in captivity let alone in the wild. Tests for diseases in 1992 and 1993 have not produced any evidence of pathogens such as protozoans, bacteria or viruses. There is now concern that the poor breeding performance and failure of eggs to hatch may be the result of genetic abnormalities resulting from inbreeding. We know that the stock is inbred. It descends from three mated females seven generations ago and no new material has been introduced subsequently. It is very likely that the colony had been inbreeding in the wild prior to the founding of the captive stock, because it appeared to consist of less than a hundred individuals and to be isolated from other potential habitat. To test whether inbreeding is contributing to poor success, some of the captive stock could be paired with individuals from another strain and success rates compared. A marked increase in the latter would indicate that inbreeding is a factor. In the absence of wild British material, stock is needed from continental Europe. The results of such a test may help to explain the disappearance of other small and isolated colonies during this century. Whether or not the hybrids would be suited to life on the British coast is another matter, because the habits and even the appearance of some of the forms on the continent differ from those in Britain.

Any contacts and information regarding large colonies of *T. smaragdaria* in continental Europe would be most welcome.

Acknowledgements

The Essex Emerald work above was funded by English Nature and the Joint Nature Conservation Committee. I would like to thank Dr Susan A. Clarke for her help with the nocturnal observations.

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Two species of Otitidae (Diptera) circumstantially associated with Umbelliferae

Smith, 1989 (An introduction to the immature stages of British Flies. *Handbk ident. Brit. Insects* **10:** 14) states that the larvae of *Ottites guttata* (Meigen) and *Dorycera graminum* (Fabricius) are underdescribed. He cites the remark by Séguy, 1934 (*Faune de France* 28 Dipteres (Brachyceres) Muscidae Acalypterae et Scatophagidae) that *Dorycera graminum* females oviposit in the ovaries of *Tamus communis* L., although Séguy himself quoted this from works by Robineau-Desvoidy and Macquart.

Otites guttata is widespread in Kent and I have personally taken it in ten localities (all but two of these being on the North Downs chalk) on dates ranging from 9th May to 22nd June. A common factor wherever the fly has been found is the presence of hogweed, *Heracleum sphondylium* L. Specimens were either swept directly from stands of the plant or, in one case, tubed from a nettle plant growing nearby.

Dorycera graminum is currently listed as a *Red Data Book* 3 species (Falk, 1991. A review of the scarce and threatened flies of Great Britain). I first encountered this species in large numbers on 13.vi.1992 whilst generally recording diptera at Kingsnorth on the Hoo peninsula on North Kent (51/8173). Although distributed over a fairly wide area, the fly seemed particularly concentrated where hogweed was growing. Specimens were swept only from the lower leaves of the plant and none could be found feeding from the flowers. On 6.vi.1993 I attended a meeting of the Kent Field Club at Grain (51/8877) which is also situated on the Hoo peninsula. Considerable numbers of *Dorycera graminum* were swept, but this time mainly from or around alexanders *Smyrnium olusatrum* L.

There is little evidence to suggest that the larvae of Otitidae are specifically phytophagous and the adult flies may simply be chemotactically attracted to certain plants. Mr P.J. Hodge recently informed me that "swarms" of the tephritid *Anomoia purmunda* (Harris) are regularly attracted to the flower heads of *Achillea filipendula* in his garden. The larvae of this species, however, develop within berries of, for example, hawthorn. If my observations *are* no more than circumstantial, it is hoped that they will at least stimulate more recording of two genera of this very neglected family of flies. – LAURENCE CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

Orthosia cerasi (Fab.) (Lep.: Noctuidae) – an unusual date

On the night of 3rd November 1993 a slight battered male *Orthosia cerasi* (Common Quaker) came to one of my garden m.v. traps. It was otherwise an unremarkable entomological night with the usual late autumn residents amongst which this species looked extremely out of place.– JULIAN CLARKE, Oaklea, Felcourt Road, Lingfield, Surrey RH7 6NF.

ON THE LARVAL FOODPLANT OF *PONTIA CHLORIDICE* (HÜBNER, [1808-1813]) IN BULGARIA (LEPIDOPTERA: PIERIDAE)

Stanislav Abadjiev

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IN THE MIDDLE of June 1993, I was in the low eastern parts of the Rhodopi Mountains (South Bulgaria) for the purpose of collecting some rare Bulgarian Pierids. On 16th June I examined the left bank of the Arda River, just near the small railway station of Sredna Arda. Around was an interesting formation of volcanic rocks and screes with rare vegetation. There was an abundance of flying second generation specimens of *Pieris krueperi* Staudinger, 1860 and *Pontia chloridice* (Hübner, [1808-1813]).

The biotype of *P. chloridice* is an arid scree with south exposition. In the early afternoon (at about 1.00 to 2.00pm local time) I observed three females of *P. chloridice* ovipositing on a small plant. The females lay their eggs singly either on the upper leaves or directly on the flowers of the plant. I took three eggs and several blades of the plant and travelled back to Sofia on the same day.

The plant was identified at the Biological Faculty of Sofia University as *Cleome ornithopoides* L., (1753) (family Capparidaceae Juss.). *C. ornithopoides* grows between the stones of screes. The distribution of the plant in Bulgaria is similar to the known range of *P. chloridice* (eg. Sliven, East Rhodopes) (Abadjiev, 1992). Also, I have been told, the plant is well-distributed in Asia Minor.

To my knowledge there are two records about the larval foodplant of *P. chloridice*. In Kazakhstan near Uralsk the larva feeds on *Sisymbrium junceum* M. B. (Bartel, 1914); and in Tadjikistan the larva feeds on *Cymatocarpus popovi* Botsch. (family Brassicaceae), an endemic of Vakhshsk Valley (Shchotkin, 1987).

Acknowledgement

I must express my hearty thanks to Dr Dimiter Dimitrov from the Herbarium at Sofia University for the identification of the plant and for the helpful information provided. Special thanks go to Mr Lutz Lehmann (Eisenhüttenstadt, Germany) for his kind assistance with the work of Max Bartel.

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Amphipyra pyramidea (Linnaeus) Copper Underwing (Lep.: Noctuidae) larvae on grape-vine (_Vitis vinifera_)

On 7.v.1991, whilst carrying out field work at Rothamsted Experimental Station, Herts, I was informed by a couple exercising their dog, that the grape-vine in their conservatory in nearby Harpendon had been seriously defoliated by numbers of quite large caterpillars. Naturally, I asked if it was possible to see the problem and perhaps offer advice. I later visited the house, equipped with boxes suitable for Sphingids, etc. (ever the optimist!) but was slightly surprised to find that the culprits were the larvae of *Amphipyra pyramidea* (Linn.).

Considerable damage had been done to the leaves of quite a large vine. At least 20 to 30 larvae had already been removed and disposed of, but I was able to locate two, already in their final instar at this early date. Both were reared through to confirm their identity. Regarding their origin, introduction with the foodplant can be ruled out, from the age of the vine. Therefore, the most likely explanation is that a gravid female somehow entered the conservatory, perhaps initially in order to hide during the day. This species is known to be attracted to buildings as hiding places (Skinner, B. 1984. *Colour Identification Guide to Moths of the British Isles*. Viking, Harmondsworth). Her progeny were subsequently able to mature rapidly in warmth and relative safety.

Amphipyra pyramidea has been recorded on a variety of trees and shrubs (Skinner, *loc. cit.*), including *Buddleia davidii* (Owen, D.F. 1983. *Ent. Rec.* **95**: 20). However, since I can find no reference to it feeding on grape-vine the above record, albeit from a slightly artificial situation, may be noteworthy.– MARTIN C. TOWNSEND, 29 Coniston Avenue, Headington, Oxford OX3 0AN.

Bibio johannis (L.) (Dipt.: Bibionidae) in urban London

On 29th March I was visiting some offices in the newly-built Canary Wharf complex in London Docklands and I noticed a large number of Bibionid flies above the turf of a recently laid formal lawn set amid the acres of stone and asphalt. I captured one of the insects that had settled on a wall and it turned out to be the widespread and often abundant *Bibio johannis* (L.).

Last year in early April I found the same insect in considerable quantity flying low over newly laid turf on the front lawns of the National Maritime Museum, Greenwich across the river Thames about two kilometres to the south of Canary Wharf.

This species is almost certainly being brought into these sites as larvae or pupae with the high quality turf that is being used in these prestigious city locations and it will be interesting to see if they are able to persist: perhaps unlikely as they would already be much more widespread than they appear to be in urban parks and gardens.–PATRICK ROPER, South View, Sedlescombe, Battle, East Sussex TN33 0PE.

THE HAZARDS OF MOTH HUNTING

THE LATE A.J. WIGHTMAN

INTRODUCED BY PAUL SOKOLOFF

4 Steep Close, Orpington, Kent BR6 6DS.

Introduction

FEW PEOPLE now remember Archibald John Wightman who died some 23 years ago, but in his time he was an entomologist of considerable stature. He began studying the lepidoptera in the 1890s, continuing throughout his life – and was even noted collecting at night in the depths of Borth Bog at the age of 83. He specialised in collecting and breeding the Noctuidae and was adept at breeding, often in large numbers, even the most difficult and fastidious species. His knowledge of these moths was prodigious and his large collection immaculate. On his death, some 1300 of his specimens were selected for the Rothschild-Cockayne-Kettlewell collection.

A physically large man, and a larger than life collector, he also attracted a measure of folk lore – he was reputed to carry his coffin with him on collecting trips: in truth, he had converted his car to carry a large chest which both held his field collecting equipment, and doubled as a bed. Fulsome tributes appeared in the *Entomologist's Record* (1971) **83**: 113-115 and *Proc. Trans. Brit. ent. nat. Hist. Soc.* (1971) **5**: 75-80.

He wrote many notes and articles, particularly in the 1930s and 1940s, many of them appearing in this journal. The essay presented here has never been published. It was written by A.J. Wightman at the age of 85, about a year before his death in March 1971. When discovered, it was untitled, but carried the comment ". . . a few notes on the hazards that can befall anyone who goes out moth hunting . . . .", from which the current title is derived. His first account deals with a trip taken in 1907 and in which an acetylene gas lamp features. Way before the invention of portable lamps such as the Coleman or Tilley, collectors used acetylene lamps – designed for use as a light on a bicycle (hence the term "cycle lamp"). Acetylene gas was produced by allowing water to drip onto powdered calcium carbide. The commercially available calcium carbide was usually impure, contaminating the acetylene with small quantities of phosphine and hydrogen sulphide, making the resulting gas rather foul smelling. The gas was then burnt to give light. Acetylene needs a plentiful supply of oxygen to burn properly; without sufficient oxygen it burns with a smoky flame, blocking the burners. To overcome this, the gas was conducted along two thin tubes directed towards each other. When lit, the burners produced a thin sheet of flame with maximum surface area exposed to the air. The flame is very hot (hence its use in welding) and very bright. Apart from weight and bulk, these lamps were very efficient as sources of light for collecting.

The essay

Taking the opportunity of the long winter evenings, I have been reminded of my own experiences, when out with a portable light, searching for larvae. This is a method of collecting that has always appealed to me far more than getting the perfect insects at light or sugar, partly because I wanted to know the habits in nature, and partly because I hardly ever get a really perfect moth other than by breeding. Over a period of sixty or more years, I have had plenty of trouble from free-ranging bulls, savage stray dogs, guard dogs, barbed wire, smashed lanterns and such accidents.

Working alone one can get into trouble where the presence of a mate could quickly put matters to right, although again I have had trouble just because as one of a party, I have become embroiled in someone else's difficulties. In 1907 I went with two friends, Taylor and Sharp, to the cliffs at Beachy Head, East Sussex, to sugar the flower heads for the Northern Rustic, *Standfussiana lucernea* L., a species only to be obtained in Sussex at the extreme southern point of those cliffs. Taylor and I were new to the spot, Sharp was not and although we knew the spot was considered dangerous, we felt safe under his guidance. Arriving there in good daylight, we called at the lighthouse and told the Keepers of our intention of using lights there, and they raised no objection, but repeated the warning about the locality.

Having sugared hardheads (*Centaurea* sp.) that in those days were plentiful all along this bit of cliff, we retired away from what to me seemed a very risky spot, and sat down to await the coming of darkness. It was then that Taylor displayed a leather harness that he had obtained and upon which a cycle lamp bracket has been fastened so that he could from time to time put his lamp on it to have both hands free for boxing.

At that date the collecting light was a very heavy acetylene cycle lamp – clumsy, but giving a grand light, and although the burners were liable to get choked up, replacement in the field was simple. Both Sharp and I admired the idea, but it was obvious that improvements were called for, as the weight of the lamp caused it to droop onto his stomach. As events were to show, we had overlooked a far greater fault, for the fastening – a buckle and pin affair – was concealed by the bracket.

It was a grand evening as regards the conditions, good cloud cover but no threat of rain, warm as a late July night should be, so as soon as the light had faded enough, we got up and Sharp led us back along the cliffs towards our sugared flowers, we lighting up as we walked, just the water to turn on and then a match to the burner. Taylor put his lamp on his belt before he did this, and when he put the match to the burner the whole lamp burst into flame, he having failed to tighten up the gas chamber, and so intense was the flame that it was not possible to touch it with the hands nor could we knock the lamp off the bracket, and as the flame was touching his stomach, his clothes were being ignited. In a panic, fearing that he might be cremated far too

young, Sharp cut the harness by pulling at the back, to get the knife inside, and so not cut the man. The lamp and harness fell away, and as a result of the jerk Taylor fell backwards and disappeared over the cliff. After a moment of horror, we heard Taylor calling for help as he was on the very edge of the cliff, and we then found that in the commotion, we had got to the cliff face at a point where a big fall was in process, and the sagging cliff top had formed a sunken undercliff, and in this very dangerous place Taylor was lying. Rescue was not too difficult, if only the cliff kept up, under the weight of all three. This shock had upset our moth hunting elan, so we decided to get away from the danger area, have a rest and then go home, but when nerves had steadied up we changed our minds, and found that our flowerheads were acrawl with moths including numbers of freshly emerged *lucernea* in fine condition, both sexes being about in equal numbers. And so what threatened to be a very black day, appears in my diary as a red letter day.

A good many night trips to similar areas, during the following fifty odd years, were on the whole free from trouble, and I had come to think that solo work in such places was really much safer than in company, as when alone one has only to take acceptable risks, and there is no danger of being involved in what someone else might be disposed to risk, but I was to learn that this is not always so, and being alone can be a danger, for the worst fright of my collecting life came only a few years ago, when I had gone to the Isle of wight in mid-April to search for larvae of *Aporophyla australis* on the cliffs just below the Tennyson Memorial. The cliffs in that area are specially dangerous, by reason of extensive falls over the years, which have left a very wandering cliff top with gaps between protruding portions, so that every step must be carefully surveyed before any trust is placed in it. Knowing how plentiful the species is at that spot, I had made my trip a one night affair, and so when the weather turned foui, I had to get all dressed up in greatcoat, mackintosh, sou'wester, rubber-boots, in fact so wrapped against the wind and rain, that I feared that I might be blown over the cliff, if the wind treated my clothes as sails, and as a result I was crawling about on my knees, using an old mack' as a kneeling mat. In the early hours of the morning a huge black dog suddenly turned up, and at once came in to attack with lips well back, teeth at the ready and growling. I shouted for his supposed owner to call him off, but got no response, and so still calling out, I crawled at the dog, putting the lantern to his head, and so by degrees got away from the cliff edge, and struggled to my feet, but even then the case was desperate, for the dog was quite a large black Dane, not so huge as he first appeared, but still large enough to have been frightening even in broad daylight and far from the cliff tops. He continued to come at me, ready to bite, and from the persistent way he worked around me, I felt quite sure that he was a trained guard-dog, off his beat, but determined to do his stuff.

This animal moved steadily around me, trying to avoid the glare of the lantern, and get at me from the rear, which compelled me to back away and

keep turning at the same time, and all wrapped up as I was, I feared that if he got me down, he might well be able to worry me, as a dog can worry a sheep. After a few minutes that dragged as years, I became aware that a second dog, probably a bitch was present, but keeping just outside the circle of light, and it was quite a half-hour before my attacker gave up his rushes, and widened his distance, finally joining presumably his mate, but even then he still kept appearing into the area of light, and so kept me walking backwards, until I was nearing my small car, that was parked by the old fort. I shall not say I was frightened by this episode – I was downright terrified.

But this was not to be my final dog trouble, for only six years ago, quite near my home I had dog trouble again, this time in a wood, a spot with which I was quite familiar. I had gone to Chiddingfold to search for spring-feeding larvae, and having parked my car in an open space in the wood just off the road, I lighted the lantern and went on a trip through the rides, but found the gravel very wet, and so went back to the car and collected a pair of rubber boots from the rear seat and resumed my searching. Collecting was not too good, and about midnight, having had enough, I went back to the car, intending to drive home. As I approached the car, I fancied that I could see a pair of eyes peering at me from the rear seat behind the driver's place, and on reaching the car found that I had a passenger, a really huge black Dane type mongrel, sitting bolt upright, and keeping perfectly still. I opened the door and talked to him as one does to a dog, telling him that he was in the wrong car, and that as I was not going his way, he had better get out and walk home, but he seemed not to hear me, so at last, seeing that he was wearing a collar, I put out my hand to read the name on it. My docile dog, at once let me hear his voice and see his teeth and my hand came back faster than I had put it forward. I thought of several good ideas to get him out, such as getting into the other rear seat, with a coat over my arm, and pushing him out by stages. Let me say it was I who got out, not the dog, so here I was, in another black dog trouble.

What a position to be in! Should I get in and try to drive home with the dog, breathing down the back of my neck, and risk him thinking he was being kidnapped, and strike back, or would it be best to hang about where we were all night, in the hope that at last he would get home-sick? No safe and speedy solution of the problem seemed likely. After a while I decided to drive to Chiddingfold Village on the main road, and see if I could find a policeman, with ideas, and so I got in to the driver's seat, leaving the door open, and started up the engine but having that head at the back of my neck, caused me to sit awhile to give him a chance to get out, finally I decided to leave all doors open, and drive on to the road.

I hoped the dog would use the rear door to alight from, and I meant to have a front door that I could escape from if need be, and so with three doors as driving hazards, I drove down to the only house in the wood in that area, pulled to the ditch on my nearside, and waited hopefully that this might be my passenger's abode, but he made no move, and after a few minutes, a light

came on in one of the upper windows, a head came out and asked what the trouble was. That, I fully explained, and from this conservation I learned that this dog was from a gipsy encampment in a nearby wood, and was harmless if not touched, but savage if interfered with, and my new friend came out and confirmed that I had indeed got the gipsy dog. He thought it most unlikely that I should find anyone at the encampment, if I drove there, and suggested that on his home ground the dog might attack without being touched, nor did he think I should get anything out of driving to the village, at that time of night, and we really could not think what should be done. The dog decided at this stage to find out what we were hatching up, came out slowly, wandered over to us and sat down behind us, like a well trained dog might be expected to do. Now said my kind helper, you go to the car, I will go to the house, so into the car I went and closed all the doors, waited until I saw the house door close, and then drove home, leaving the dog in the road at the spot he had walked to, he did not seem to care and looked so innocent sitting there, I almost felt guilty in deserting him.

The only occasion when I was seriously hurt, occurred in daylight, and this was due to my riding a single strand of barbedwire, over a trout stream, I was powerless to free myself, and salvation only came when my weight pulled out the posts to which the wire was attached, and dropped me into the stream, where with one foot at last, able to get contact with the hard bed of the stream, I thought I could free myself from the wire, but no, I was still held in a firm grip, with the barbs cutting into the inside of my by now, well lacerated leg. I was wearing a pair of riding pants, tough melton material, buttoned below the knee, and they would not tear away from the wire, until I had got out a rather blunt knife and split them from the thigh to below the knee.

I have sometimes thought that I must be a sort of Jonah, and that it always must happen to me, but in fact considering the number of trips I have made, perhaps I have been lucky, as I know of others who have had quite serious mishaps, such as being threatened with a gun, by a man who not only threatened to shoot, but from his actions, likely to do something of the sort, while another friend of mine fell through a reed-bed which was in fact once part of the main stream of the Sussex Ouse, had great difficulty in getting out, and when he did make a landing, he was wet through, had lost his glasses, and had two hours to wait until he was to be picked up by his driver whom he had sent on a mission to Lewes. Knowing that he must keep moving, he started off towards Lewes in order to meet the returning car, when at a sharp bend in the road, his car shot past him and away to the rendezvous, quite a time before it was expected. Now the trouble had deepened, because the driver seeing that his employer had been in the water, might well not return to Lewes but go to the nearer Newhaven for help. But he did in fact return quite shortly, and got him home in double-quick time, where a day in bed soon got him back to normal, but his missing glasses were a big trouble. I had hardly got away from the telephone, over which I

had heard of the accident, when another collector came to my door, and asked if I had lost my glasses in this reed-bed, as he had been to the spot that day and seeing that someone had been in the water, looked around and found a pair of glasses in the reeds. Knowing that this was a favourite spot of mine, he had concluded that it was I who had taken the plunge, and kindly brought the glasses to me. When I phoned up the owner of those glasses, I had quite a job to convince him that I really had his lost glasses and he could send his driver for them.

Empis (Coptophlebia) melaena Bezzi (Diptera: Empididae) in East Kent

Collin, 1961 (*British Flies: Empididae*) recorded *Empis melaena* from Purley in Surrey and Hampshire. Falk, 1991 (*A review of the scarce and threatened flies of Great Britain*) awarded the species *Red Data Book* 1 status. On 20.vii.1985 I took a single female *melaena* at Lydden LNR (61/278453) near Dover. The site is chalk downland with a south-west aspect, although the specimen was probably swept from hawthorns along the periphery. Thanks go to P.J. Chandler for confirming my identification.– LAURENCE CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

Hazards of butterfly collecting – Relics of Empire. India, 1985

Looking after a large development project in Tamil Nadu in southern India did have its occasional entomological spin-offs. I was travelling with members of the Danish Government Audit Office in the august business that auditors have, but we did have the chance of stopping briefly at the wonderful rock-carved temples at Mahaballipuram on the way south. They are among the jewels of Hindu art, in the *vaut le voyage* category of the Michelin guides.

I was delighted to see vast numbers of Red-Bodied Swallowtails (*Pachliopta hector* and *P. aristolochiae*) roosting communally among the ruins, and the auditors were suitably impressed at how difficult it was to tell the two toxic *Pachliopta* from their perfect mimics, in two forms of *Papilio polytes* females. They *should* be impressed. The mimicry between these two is not only near perfect, but it varies geographically. In southern India nearly all *P. polytes* females are mimetic, and they mimic both *Pachliopta* in more or less equal numbers. In Dehli, nearly half the females are male-like and non-mimetic, while the remainder are mimics of the only *Pachliopta* that occurs there, though very sparsely. Finding the other form, a mimic of *P. hector*, not occurring in northern India, was as sensational in Dehli as it was common-place in southern India. I suspect the vast numbers of *Pachliopta* at Mahaballipuram was a dry/cool season aestivation roost, composed of migrants from further east, but I am not sure. I am certain, though, that both the mimicry relationship, the polymorphism of *P. polytes*, and the migrations and roosting of the *Pachliopta* are deserving of much additional research.

The Common Mormon, *Papilio polytes* (top) a wonderful mimic of the Crimson Rose, *Pachliopta hector* (below).

Our project area had little in the way of hotel accommodation, and since government auditors must be treated with kid gloves, we had booked at the *Hotel de France* in Pondicherry. Lest anyone should think that a hotel of this name in the boondocks of Tamil Nadu is somewhat incongruous, let it immediately be said that Pondicherry is composed of a few square kilometres of Union Territory. It used to be a French colony, but the French graciously (well, more or less) quit in 1958, thus avoiding being evicted by force as were the Portuguese from Goa in 1961. Faint memories of France still survive: a cemetery, a large proportion of Christians, a police force still wearing *kepis*, street signs exactly as you see them in Paris (such as *Impasse Leon Blum*), several reasonably good Indo-Chinese restaurants, and Hotel de France. Otherwise the memory of times French had largely gone. I always wanted to do a quick survey in the streets of "Pondi", as it is always known, to find out how many of the locals knew who Leon Blum was, but this was never to be.

The proprietor of Hotel de France, appropriately, was probably the most prominent remaining link between Pondi and France. He was a tall, stooping man, in his mid-seventies. His four children were citizens of France, he spoke fluent French, passable English, and halting Tamil. He believed in maintaining standards. . . and he did have the only reasonable hotel in an area larger than Denmark.

There was a standard evening ritual. At 17.30 *le Patron* would descend from his quarters. A *digestif* would be offered –on the house – with profuse regrets that we had to make do with "Indian Made Foreign Liquor" (one of those wonderful combinations of words which only Indian bureaucracy can concoct). When all are comfortably settled with a drink, stage two: "*Et maintenant, un peu de musique?*" Two minions wheel out a giant console containing an ancient gramophone: complete with the type of funnel speaker

which the dog of "His Master's Voice" used to contemplate with a doleful expression. Soon the rhapsodies of Liszt would struggle out, competing with the static and scratches of the 78rpm record, which had seen 30 years or more of daily service.

The three-course dinner menu is impeccably hand-written, as you see it in provincial France. The descriptions, alas, vastly surpass what we actually get to eat. But, our *patron* is talkative. This is the very dining-room where ministers, governors, prefects, and the *creme-de-la-creme* of Pondi society have dined. Charles de Gaulle slept here, admittedly during the Second World War, and not as President. "*Mais, maintenent!*" – he shrugged his shoulders, implying that auditors and aid administrators were not entirely up to his standard.

Our host was gracious, having increasingly less to be gracious about. As we checked out, he discreetly inquired whether we could pay in *devises etrangeres;* then he could send his children in France some real (ie. non-Indian) presents. We could not oblige. There are draconian currency restrictions, and what with two auditors in tow. The demise of empire, anywhere, leaves victims in its wake, but there is, perhaps, also an obligation to adapt.– T.B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

Lonchoptera nitidifrons Strobl (Diptera: Lonchopteridae) in Greater London and Kent

Smith, 1969 (*Handbk Ident. Br. Insects* **10**: 2ai) gave Cheshire, Oxfordshire, Somerset and Suffolk in England and Bardsey Island in Wales as localities in which *Lonchoptera nitidifrons* had been taken. Falk, 1991 (*A review of the scarce and threatened flies of Great Britain*) lists the species as notable i.e. believed to occur within the range of sixteen to one hundred ten kilometre squares. On 30.viii.1993 I visited Barnes Cray near Crayford (51/526 749) in order to survey diptera on behalf of the Kent Trust for Nature Conservation. On subsequent examination of retained pinned material I identified a single female *nitidifrons* along with three of the very common *Lonchoptera lutea* Panzer. In addition to having the key characters of two yellowish basal antennal segments and a fourth small bristle on the upper part of the front tibiae this female was distinctly smaller and much more uniformly pale orange than *lutea* and I recalled having seen many similar specimens in the sweep net. In order to try to discover the exact site of capture I returned to Barnes Cray on 3.ix.1993. Since the area covered on the first visit was not large I retraced my steps and quickly located a colony where I had crossed a stream in order to investigate some grazing marsh. Large numbers of females were to be swept from aquatic vegetation e.g. *Veronica catenata, Nasturtium officinale, Lycopus europaeus* and *Mentha aquatica.* A further foray into the adjoining grazing marsh yielded numbers of *lutea*, males and females, only.

On 18.ix.1993 I attended a Kent Field Club excursion to West Wood, Lyminge Forest (61/1343) and was surprised to take a further pair of female *nitidifrons*. This site was in complete contrast to that at Barnes Cray, being coniferous plantation with large stands of bracken and no fresh water of any description. A week later during another KFC meeting, this time to Kiln Wood, Lenham (51/888 5155) another pair of *nitidifrons* females was taken. At Kiln Wood they were swept from dense vegetation including *Mentha aquatica* growing in a calcareous pond.

The final surprise in the saga of *nitidifrons* came a couple of weeks later whilst I was preparing a list of *Lonchoptera* for Dr C.M. Drake, co-ordinator of the Lonchopteridae recording scheme. A single female was found amongst a small batch of unidentified material taken on 11.vi.1989 from Round Down, Dover (61/293 396). This locality is on the chalk cliffs above the Channel Tunnel entrance and again, is completely dry. Dr Drake subsequently informed me that the current records for *L. nitidifrons* suggest that it is a fenland species so the records for West Wood and Round Down are puzzling. He stated that there was no reason to doubt that the characters given for the separation of adult *nitidifrons* from *lutea* are not valid. Smith, 1968 and 1989 (*Handbk ident. Brit. Insects* **10**: 14) states that only *L. furcata* Fallén and *L. lutea* have been identified in the larval stage. It would appear that the larvae of these species are generally saprophagous. My experience with the adult females is that they are particularly to be found where aromatic labiates grow and whilst these may or may not have any direct role in the life cycle of the *nitidifrons*, they should perhaps be more diligently searched in future for the fly.– LAURENCE CLEMONS, 14 St. John's Avenue, Sittingbourne, Kent ME10 4NE.

Athroloopha pennigeraria (Hübner, 1813) (Lep.: Geometridae) in Spain

This day-flying Geometrid is, according to Gómez de Aizpúrua (1987) distributed throughout Spain and in the south-western corner of France. He cites the Pyrennean foothills as being especially favourable, including in his assessment Navarre and the Basque Country, more specifically, Javier and Leyre in the former province, and Araya and Zalduendo in the latter.

He also details the vicinity of Madrid from whence come my own observa-tions. The overwintering larvae can be seen in areas exposed to the sun from March to May on their foodplant, *Santolina* ssp. as well as *Ulex* spp. I collected about 17 fully-fed specimens on the former plant along the railway line which runs from Madrid to Segovia in the area of Gudillos in the Sierra de Guadarrama. The larvae feed quite exposed on their foodplant and are very easy to pick off. My own examples began to "go under" within two days of collecting them on 24th March 1990 and had all pupated within two weeks.

Imagines began to emerge on 16th May, more or less the same time as moths were seen on the wing in Gudillos. Initially, males were well outnumbered by females, one male was known to have fertilised no less than

four females. Pairings were very simple to obtain in nothing more than a bare net cage. There seemed to be no particular hour when copulation occurred as my notes referred to three quite different times in one day; 1120, 1215 and 1900. The females oviposited immediately, laying large batches of greenish ova between two sheets of paper provided in a jar. Within ten days I had thousands of tiny larvae. Those I kept I reared on their original foodplant but managed to lose all, due I believe to the summer heat of the Spanish capital being considerably warmer than the nearby sierras.

References: Gómez de Aizpúrua, Carlos (1987). *Biología y Morfología de las Orugas*, Vol. III, Geometridae; Gómez de Aizpúrua, Carlos (1974). *Catálogo de les Lepidópteros que integran la Colección Cientifica del Norte de España;* Gómez Bustillo, Dr M.R. *Catálogo Sistemático de los Lepidópteros Ibéricos* (1981).

– GARETH CLUMO, 2 Longbridge Road, Lichfield, Staffordshire WS14 9EL.

Blastobasis decolorella (Woll.) (Lep.: Blastobasidae) – new to west Suffolk

On 3rd August 1991, when I was visiting Northfield Wood, Onehouse, I saw a specimen of *Blastobasis decolorella*, which had been disturbed from the vegetation and settled on the path. I recognised the species immediately, since I had been introduced to it by Mr S. Wakely when I lived in south London and I had also discovered it new to east Suffolk on 8th August 1959 at Aldeburgh. I understand that this moth has now been recorded from all the surrounding vice-counties but that this is the first record for west Suffolk (Col. A.M. Emmet pers. comm.).– ALASDAIR ASTON, Wake's Cottage, Selborne, Hampshire GU34 3JH.

Abundance of the spring brood of *Pararge aegeria* (L.) (Lep.: Satyridae) in S.E. London, 1994; with a few local observations

During the fine and sunny weather at the end of April and beginning of May, I was struck by the exceptional profusion of the Speckled Wood, greater than I had seen anywhere before. This was the case in all suitable situations: Maryon-Wilson Park, Woolwich Common, the Shooters Hill woodlands. Even my garden was favoured, though in a far more modest degree. Here I think it must have bred both last year and this (there being plenty of rough uncut grasses), to judge from the presence of a specimen or two at frequent intervals through the season. Quite evidently they were not just passing through but resident for periods of a week or more, taking up basking and roosting positions on a clump of Bergenia or the adjacent cypress hedge, and/or a large mass of honeysuckle close by the house. The butterflies seem to show territorial behaviour in both sexes, female especially – one pertinaciously defending the honeysuckle thicket against any intruder (human included!). Later in the summer, and in autumn, the species is more seldom seen in the garden.

In Maryon-Wilson Park I have known a male *aegeria* to return repeatedly to a roosting-perch in the evening or in dull weather, a nettle plant beside a

shady path. The same leaf was invariably used (I wonder whether a recognition-scent is involved here). The specimen was self-marked by a small nick in one wing; it eventually fell victim to a bird.

On 1st May, on Woolwich Common, the butterfly was numerous everywhere in the vicinity of bushes or trees. Along a path flanked by young poplars, it was a new experience for me to put up Speckled Woods from the grass at almost every step, for all the world like Meadow Browns in high summer. In contrast, they were entirely absent from bare open grassland, showing that though the species has in recent years ventured far from its original sylvan retreats in the course of its spectacular spread into suburban areas, it still retains its essential liking for the proximity of shade.

In view of the abundance noted above, it is remarkable that *P. aegeria* appeared very scarce in the woods at Chislehurst, some miles to the south, in perfect weather on 22nd and 30th April.– A.A. Allen, 49 Montcalm Road, Charlton, London SE7 8QG.

Sparganía luctuata (Denis and Schiffermüller) White-banded Carpet (Lep.: Geometridae) new to Hertfordshire

On the morning of 1.vi.1992 a rather worn male *Sparganía luctuata* (D. & S.) was found inside the m.v. light trap in the garden at my previous residence in Harpenden (OS grid reference TL 146 132). Since this appears to be the first record of *S. luctuata* from Hertfordshire (C. Plant, pers. comm.) an investigation into its possible origin seemed worthwhile.

Sparganía luctuata breeds on *Epilobium angustifolium* (Rose Bay Willowherb) in woodland rides and clearings (Skinner, B. 1984. *Colour Identification Guide to Moths of the British Isles*. Viking, Harmondsworth). The Harpenden site is an urban garden, but suitable-looking habitat exists to the south east, with small woods about a mile away and more extensive woodland at about four miles. Beating large stands of the foodplant for larvae in the nearest woods in September 1992 was unsuccessful, the only geometrid larvae encountered being those of *Ecliptopera silaceata* (D. & S.) (confirmed by rearing).

However, the moth was caught during a period of warm southerly winds and may therefore have come from one of the known strongholds of *S. luctuata* in south-east England, which are in Kent and Sussex (D. Agassiz, pers. comm.), or from the Continent. This species has also been recorded from Essex (Skinner, *loc. cit.*) so it would be interesting to know whether it has colonised east Hertfordshire. The specimen was retained and was shown at the 1993 BENHS Exhibition.

Thanks are due to David Agassiz and Colin Plant for providing information on the distribution of *S. luctuata*.– Martin C. Townsend, 29 Coniston Avenue, Headington, Oxford OX3 0AN.

Eucosma pupillana (Clerck) (Lep.: Tortricidae) taken in Buckinghamshire

Whilst looking through a drawer of microlepidoptera, all of which I have taken at Willen, North Bucks, David Manning noted a specimen of *Eucosma pupillana*. This example was taken on 8th August 1991 and is, I believe, a new record for Buckinghamshire.– G.E. HIGGS, The Cottage, Willen, Milton Keynes, Buckinghamshire.

Rhigognostis incarnatella Staud. (Lep.: Yponomeutidae) in England

The contents of the Rothamsted Trap sited in Chopwell Wood in county Durham, v.c. 66, OS NZ 135580 are sent to me for identification and listing. The catch for 28th July 1992 contained a single specimen of the above species and that for 1st August 1992 contained another. These captures were surprising to say the least, but a further specimen the following year, on 3rd August 1993, confirmed my suspicion that the species was probably established in the area. Chopwell Wood is a Forestry Commission plantation with some areas of deciduous trees. It is quite an ancient wood, having been operated by the Crown Estates before the Forestry Commission was formed in the 1920s.

Col. Maitland Emmet informs me that he has records for only five vice-counties in Scotland (four of which are in the Highlands), and four in Ireland. The records from Chopwell, therefore, appear to be the first for mainland England.– T.C. DUNN, The Poplars, Durham Road, Chester-le-Street, Co. Durham DH3 3LY.

A new organisation, the International Scientific Collectors Association, is founded

It seems increasingly fashionable to minimise the contributions to the natural sciences made by the so called "amateur" or "avocational" worker. It seems nearly forgotten that virtually all of the great pioneer natural scientists – Audubon, Fabricius, Linnaeus, Rambur, Selys – they were amateurs.

Today most taxonomic and life history studies are being conducted by amateur scientists in their own time, and at their own expense. Most hold academic degrees in their field of interest, and many are the most knowledgeable experts on their particular group of study. It is quite ironic that governments use the enormous pool of data assembled by these same workers to help determine the status of possible at-risk fauna and flora, but at the same time they continue to proliferate regulations that make acquiring such data more difficult.

In July 1993, a new organisation to be known as the **International Scientific Collectors Association (ISCA)** was formed in Louisville, Kentucky. It is a membership governed and supported organisation with objectives of addressing all matters of concern to the international

community of persons engaged in the pursuit of scientific knowledge derived from collecting data or systematic specimen material in all disciplines of the natural sciences. It will be a primary goal of ISCA to bring better recognition of the important contributions made to science over the years by the traditional amateur collector, and to preserve the traditions and dignity of amateur collecting for scientific purposes as a worthy and honourable pursuit.

The Executive Council of ISCA:

Council Chairman	Rosser W. Garrison	Azusa, CA
Vice Chairman	J. Benjamin Ziegler	Summit, NJ
Councilman	Ulf Eitschberger	Marktleuthen, Germany
Councilman	Jack L. Harry	Salt Lake City, UT
Councilman	William Mauffray	Gainsville, FL
Councilman	Todd L. Stout	Bountiful, UT
Executive Director	Carl Cook	Center, KY

Publications and Meetings

On matters od immediate importance and urgency direct mail memos will be forwarded to the membership. The establishment of our own jounal is planned as soon as possible. Seminars will be held annually beginning in 1994, preferably they can be held as a specialised working group in connection with meetings of other organisations similarly oriented towards ISCA's objectives.

Why you should be a member of ISCA?

Are you aware it is a violation of federal regulations to pick up a migratory bird's moulted feather from US public land? To pick up certain seashells from the public beaches in some countries? To collect insects in some countries, or to import natural history specimens from these countries, without first purchasing a permit that can cost as much as $700.00? Do you know it is a violation of some countries' laws for anyone except their own citizens to publish scientific papers about their country's fauna and flora? Did you know you cannot legally remove a dead insect from your car radiator and add it to your collection in at least one country we know about? As incredulous as it may seem, regulations such as these are being enforced and people are receiving heavy fines and being sent to jail for violations! ISCA intends to make the public aware of how taxpayer money is being spent to enforce such frivolous laws, and begin initiating efforts for reform of regulations deemed seriously counterproductive to scientific research. we will to continue to act as a clearing-house to provide information on domestic and international regulations as they apply to scientific usage of natural history material.

Services that ISCA offers its members include: (1) Continuously updated information on the rapidly expanding complexity of restrictions applied to collecting by many countries, and information about permit requirements. As the bureaucratic process encroaches more and more into the scientific research field, it becomes evermore difficult to keep ahead in the "paper chase". ISCA memos are your single best source of information to keep abreast of current regulations; (2) Notification of impending legislative actions which may impact on collecting, or the use of natural history specimens for scientific purposes; (3) Group representation by ISCA at the legislative level, on the viewpoint of our membership regarding new actions and reform proposals affecting our fields of interest; (4) An information sheet providing free listing for wants and exchanges of material for scientific purposes from both individuals and institutions; (5) Personalised guidance on making donations of scientific material to institutions, procedures for applying for IRS tax credits (in USA) for donating scientific material, and rosters of institutions interested in receiving donated natural history collections.

Co-operative efforts

ISCA will seek co-operatively to address issues of common concern with all other like-minded associations. In particular we look forward to working toward common goals with the two already existing organisations devoted to representing the interests of scientific collecting: The Association of Systematics Collections and the Entomology Collections Network.

Information and Membership

Further information about ISCA may be obtained from the Executive Director, Carl Cook, by writing to the address below.
ISCA solicits your support through membership of our association. Annual dues are $15.00 for regular membership, or $25.00 or more for contributing membership.

THE INTERNATIONAL SCIENTIFIC COLLECTORS ASSOCIATION
469 Crailhope Road
Center, Kentucky 42214, USA

The Butterflies of the West Indies and South Florida by **D. Spencer Smith, Lee D. Miller** and **Jacqueline Y. Miller.** Oxford University Press, 1994. 284pp. plus 33 colour plates from paintings by Richard Lewington. 28 x 22mm. (?). Price £85.

The first of several introductory chapters delineates the region; continental islands such as Trinidad, the Netherlands Antilles and San Andrés are excluded, and the reasons for including South Florida are expounded. The remarkable degree of endemism, specific and subspecific, of some 350 species is considered. The second chapter deals with the geological history,

and the origins and dispersal of the butterfly fauna in detail. The remarkable interest, shown by the numerous visits by entomologists in recent years, is reflected in the comprehensive list of references. Extinction, colonisation and habitat destruction are the subjects of the next chapter. The section entitled Historical Notes is substantial; it gives a detailed account of the activities of lepidopterists in the West Indies. The final chapter of the Introduction defines the methods used in the main section of 204 pages, and this is followed by a check list stating authors and year of publication. The entire text is in double column. there is an excellent index of species and subspecies; each species appears twice, under its specific name, and also listed under its genus; subspecies also appear twice.

The main section comprises descriptions of each species under four or five headings – Description, Natural History, Range, Subspecies and Discussion; also each family and genus is described. Identification keys are not employed, indeed are not necessary. Wing venation is based on an American system, but both that and a British system are illustrated. The descriptions contain frequent use of italics for distinguishing features, while each species and many subspecies are illustrated in colour, depicting both upper and undersides, almost all natural size on 33 plates of superb quality. For each species the Natural History section provides information on distribution, scarcity, habitats, larval foodplants and description of larva where known, adult food sources, seasonal dimorphism, flight pattern and time of appearance.

There is a detailed wealth of accurate information written in an interesting style, much of it based upon the authors' own experiences. Only one apparent error is evident – *Heliconius charitonia* L. was, I believe, found on New Providence Island, Bahamas, for the first time in 1946 (*mihi, Ent. Rec.***78**: 174-179; 206-210) as a rather small form characterised by extremely narrow stripes, and was adjudged to be ssp. *tuckeri* Cmstl. & Brn., a resident of Florida, from whence it presumably originally came. The authors do not mention this (specimens in my collection and the British Museum (Natural History), instead suggest that the relatively large, wide striped subspecies of Cuba and Andros Island "perhaps" flies also on New Providence Island, i.e. two quite distinct subspecies on this very small island, one derived from Florida and the other from the South).

Siproeta stelenes L. is omitted as having occurred in the Bahamas; one was captured on New Providence Island, 26.xii. 1945, and two others observed there in the same year (*ibid*). The following are listed for various Bahamian Out Islands, but not for New Providence Island – *Vanessa cardui* L., one taken 24.xii. 1945; *Epargyreus zestos* Geyer, noted as a vagrant there by Riley (*Butterflies of the West Indies*, 1975), and found commonly around Nassau in 1945 and 1946; and *Burca concolor atrata* Rindge found on New Providence Island in a quite different habitat to that noted by the authors for the Out Islands, references for these, (*ibid*). The Hesperiids *Ephyriades*

zephodes Hbn. and *E. arcas* Drury require genitalic examination for certain identification; it would have been helpful to have provided diagrams, although references for these are given.

This comprehensive work focuses especially on identification, distribution, habits and habitat of each species and subspecies. There is a considerable contribution of new knowledge, including that of some sixty additional species and subspecies since Riley's work in 1975 (*ibid*). The book is well printed on good paper; the whole presentation is excellent; the considerable contribution of knowledge from the authors' personal experiences, and the perfect coloured plates make this a quite outstanding work. Its place is alongside "Pennington" and Van Son (Southern Africa), Common and Waterhouse (Australia), Corbet and Pendlebury 4th Ed. (Malaya), Brown and Heineman (Jamaica) and Larsen (Kenya), and of these only the last two named make a real contribution regarding the "life style" of the butterflies. £85 – inevitable, and worth the price.

B.K.West

A Survey of Insurance Cover for Portable Generators

Like many people who will be reading this article, I own a portable generator for the purpose of operating my moth traps. It cost me around £600 – a lot of money for me, especially if it ever gets stolen. However, to an insurance company, so it would seem, whilst £600 is a very small amount the "assessed risk" of the insured person making a claim is so great that I have been refused cover (whilst "in the field") by three separate insurance companies.

It occurs to me that this is a matter which may be of concern to other lepidopterists. Therefore I have decided to do a pen-and-paper tour of Britain's insurance companies to see who, if anyone, is prepared to offer insurance, how much it might cost and what the conditions might be. I propose to make the results of my survey available to others through the pages of this *Journal* (subject to editorial approval!).

I am therefore, very keen to hear the experiences of others. Do you have insurance for your generator? If so please write and let me know, whereupon I will send you a simple questionnaire to complete and return to me. I am also interested to hear from anyone who has been turned down for such insurance, together with the reasons for refusal and the name of the company/broker, or from anyone who was offered cover at a premium too high to be worthwhile. All other comments on insurance as it may relate to field equipment (generators, moth traps) would would be appreciated.– COLIN W. PLANT, Newham Museum Service, The Visitor Centre, East Ham Nature Reserve, Norman Road, London E6 4HN.

CONTRIBUTIONS

Readers are reminded that they are the main source of material for the ***Journal.*** **We urgently need papers, notes and observations for publication, particularly on British and European Lepidoptera, Coleoptera and other orders. Please see the inside front cover for details of how to contribute.**

WANTED

We would be very grateful for any lepidopteran larvae of UK origin killed by baculovirus infection.

This is often characterised by whitening, followed by complete liquefaction of the larva, which can then be found hanging from a prominent position on the foodplant.

Samples should be frozen for storage, and sent to:
Martin Townsend,
Ecology Group, NERC Institute of Virology & Environmental Microbiology, Mansfield Road, Oxford OX1 3SR.
Telephone: 0865 512361.

SPECIAL NOTICE

The annual Exhibition of the Amateur Entomologists Society will be held on Saturday 8th October at Kempton Park Racecourse – from 11.00 to 17.00.

The *Entomologist's Record* will be holding a stock clearance sale at the exhibition. Remember to bring a list of all your "wants" – we will have most volumes between 1952 and the present at clearance prices.

THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

(Founded by J.W. TUTT on 15th April 1890)

Contents

Notes and observations

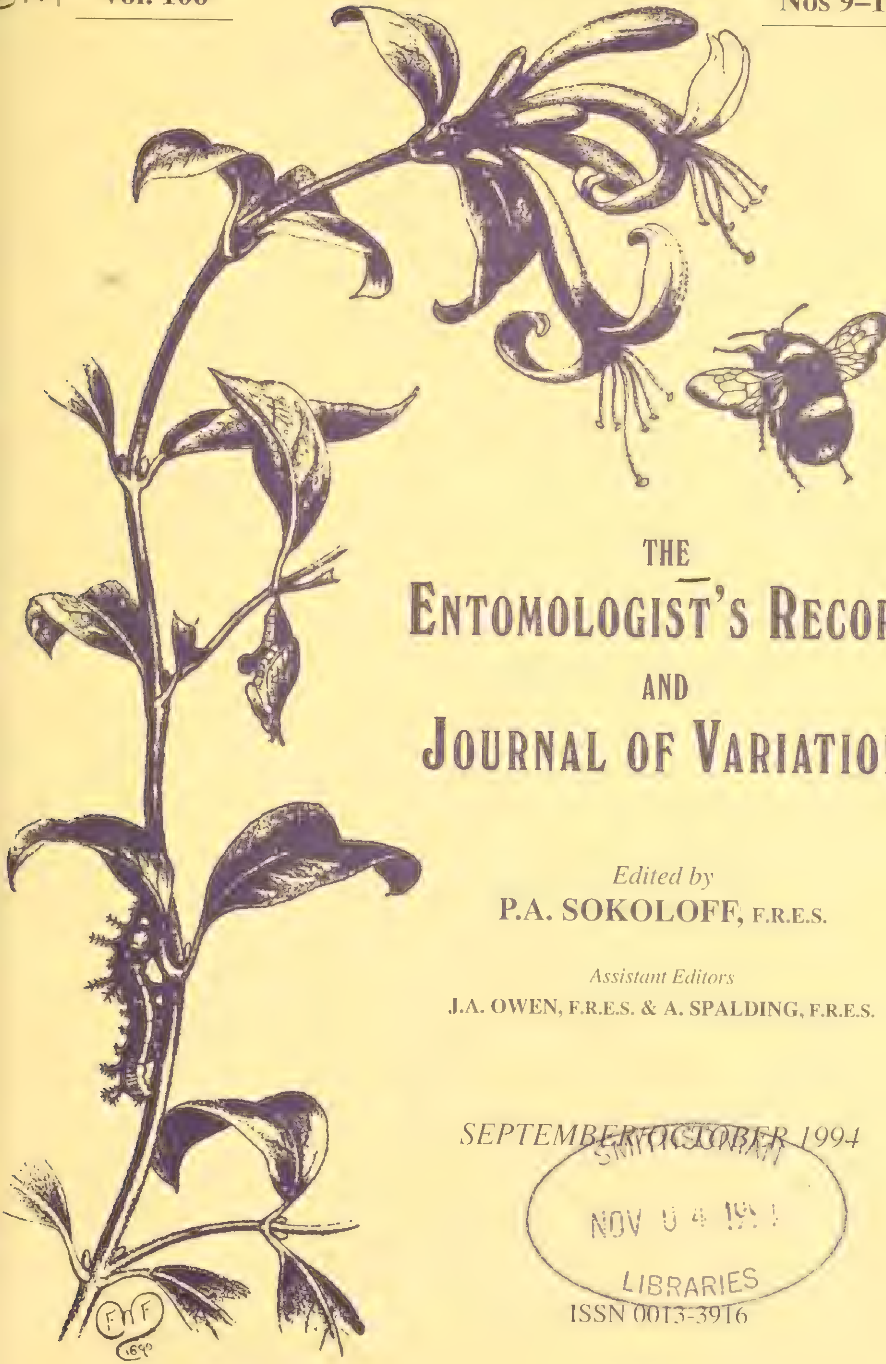
SPECIAL NOTICE. The Editor would be willing to consider the purchase of a limited number of back issues.

Printed in England by
Cravitz Printing Company Limited, 1 Tower Hill, Brentwood, Essex CM14 4TA. Tel: 0277 224610

PUBLISHED BI-MONTHLY

Vol. 106

Nos 9–10



THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

Edited by

P.A. SOKOLOFF, F.R.E.S.

Assistant Editors

J.A. OWEN, F.R.E.S. & A. SPALDING, F.R.E.S.

SEPTEMBER/OCTOBER 1994

ISSN 0013-3916

THE
ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

WHERE TO WRITE

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REGISTRAR: Subscription changes of address and non-arrival of the Journal.
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Notes for Contributors

It would greatly help the Editor if material submitted for publication were typed and double spaced. Two copies are preferred. Please DO NOT use block capitals and DO NOT underline anything except scientific names. Word-processed text should not use italic, bold or compressed typeface. References quoted within the text can be abbreviated (eg Ent. Rec.), but those collected at the end of a paper should follow the standard *World List* abbreviations (eg Entomologist's Rec. J. Var.). When in doubt try to follow the style and format of material found in a current issue of the *Record*.

Illustrations must be the original (not a photocopy) without legend which should be typed on a separate copy. Photographs should be glossy, positive prints. Authors of long papers, or submitting valuable originals are advised to contact the Editor first.

Contributors are requested not to send us notes or articles which they are sending to other magazines.

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Readers are respectfully advised that the publication of material in this Journal does not imply that the views and opinions expressed therein are shared by the Editor, the Editorial Board or the publisher.

FRUIT-FEEDING BUTTERFLIES IN LARGE NUMBERS ON FLOWERS

TORBEN B. LARSEN
358 Coldharbour Lane, London SW9 8PL.

Introduction

MANY SPECIES of tropical Nymphalidae normally feed on fallen fruit that is fermenting on the forest floor. Whole genera are only ever seen at fruit, especially the forest-floor dwellers which rarely or ever leave the forest floor. In Africa this covers *Euphaedra, Bebearia, Euriphene, Euryphura,* and the related smaller genera in the Limenitini. The genera *Cymothoe, Pseudacraea, Euptera* and *Pseudathyma* are also strongly attracted to fruit but are not forest floor butterflies. Most tropical Satyrinae are exclusively fruit-feeders. Many other Nymphalinae occasionally come to fruit, but this is possibly just as much for moisture as for nutrients. The only non-Nymphalinae that consistently come to fruit seems to be Lycaenidae of the genus *Myrina*. This fruit-feeding habit may have evolved because the forest floor of closed tropical rainforest has hardly any nectar-rich flowers.

It is well known that the Charaxinae and the Apaturinae are attracted to both fruit and rotting animal matter and excrement. Many nectar-feeding butterflies also visit rotting animal matter: most Papilionidae, many Pierinae, some Lycaenidae (mainly Polyommatinae such as *Uranothauma, Phlyaria, Azanus*) some Satyrinae (Lethini) and Nymphalinae (especially Nymphalini such as *Junonia* and *Precis*), Danainae, many Acraeinae, and a smattering of Hesperiidae (many are fond of bird-droppings).

Very few African butterflies are consistently found on both flowers and fruit. These are chiefly Nymphalinae in genera such as *Hypolimnas, Salamis* and *Antanartia; Precis, Junonia,* and others are less consistent.

More information on the feeding habits of African butterflies can be found in Owen (1971).

Observations in Kakum National Park

In May, 1994, at the Headquarters of Kakum National Park near Cape Coast in Ghana, I was therefore most surprised to see large numbers of fruit-feeding butterflies at the flowers of what I was informed was *Cleistopholis patens* (Annonaceae). Among the species were hundreds of *Cymothoe – C. egesta, C. fumana, C. caenis,* the rare *C. althea, C. aubergeri, C. mabillei,* and *C. (Harma) theobene* – as well as dozens of *Pseudacraea eurytis, P. semire, P. lucretius,* and *P. warburgi*. A few *Pseudoneptis bugandensis* also joined, and I saw a single *Pseudathyma*, probably *falcata*. Both sexes of all the species were involved. The most common other butterflies were *Salamis parrhassus, Hypolimnas salmacis, Lachnopetera anticlia,* and *Phalanta eurytis*. I also took several scarce Theclinae.

Observations in Bossématié Forest, Côte d'Ivoire

A few weeks later I was able to substantiate these observations in the Bossématié Forest, near Abengourou in eastern Côte d'Ivoire. The main difference was that here were large numbers of Acraeinae on the flowers, largely absent from Kakum at the time, as well as several *Neptis*, which do not seem to feed much under normal circumstances.

Discussion

The only explanation I can find for this behaviour is that somehow the nectar of this particular plant must be similar to fermenting fruit, perhaps because the nectar was fermenting. Why then, no forest-floor butterflies? This is easily explained by the fact that the flowers were about five metres above the ground in full sunshine along a road. For most forest floor butterflies even an ordinary road is a near-absolute barrier on a sunny day. In my camp at the Bia National Park in western Ghana a week later there was a fruiting mango tree in the clearing, no more than six or seven metres from the forest edge. All *Cymothoe* were present and several *Pseudacraea* were frequent visitors, as was *Euryphura chalcis*, a forest-floor species which has its courtship displays in clearings. I caught only two or three *Euphaedra*, a few *Bebearia*, and no *Euriphene*. On the very same mangoes, placed inside the forest, I took sixteen species of *Euphaedra*, sixteen *Bebearia*, and six *Euriphene*.

I have never before seen *Cymothoe* or *Pseudacraea* on flowers. I have seen *Charaxes* on flowers only twice; a male of *Charaxes hansali* on *Ruttaya* in Dhofar, Oman (Larsen 1983) and six males of *Charaxes zoolina* on ornamental *Lantana* at Dire Dawa in Ethiopia (Larsen 1986). The large and common pan-Palaeotropical *Melanitis leda* (Satyrinae) is an avid fruit-feeder. Only once, in Haus-Kauz Park in New Dehli, have I seen large numbers on flowers, also on ornamental *Lantana*.

It is, of course, inexcusable that I did not have the presence of mind to pick a big bunch of the flowers and take them into the forest where the forest-floor butterflies had been attracted by my mango bait to see whether they would also accept flowers. I promise to do so next time.

Acknowledgements

This is paper number six to result from preparatory work on the book, *The butterflies of West Africa – origins, natural history, diversity and conservation*. I am deeply grateful to the Carlsberg Foundation in Denmark for partial funding and to the Department of Wildlife in Ghana for their encouragement and logistical support.

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THE GENUS *APION* (COL.: APIONIDAE) ON WOOLWICH COMMON, S.E. LONDON

A.A. ALLEN

49 Montcalm Road, Charlton, London SE7 8QG.

I HAVE OFTEN REFERRED, in entomological contexts, to this not wholly uninteresting piece of rough grassland with bushy areas close by Charlton, lying between Woolwich and the western edge of Shooters Hill. Being tolerably rich in leguminous plants it produces a good number of species of the above genus of small weevils, which will at least give some idea of those to be found in a very restricted site in the London suburbs. Records extend over some 13-14 years. It is not to be supposed, however, that all or even most of the 33 species here listed can be found at any one time: one or two regarded as common (such as *A. virens*) have not been seen for a number of years, while others have turned up only recently. Order and nomenclature follow Morris (1990: 18-20), but sub-genera are omitted.

A. curtirostre Germ.: not very common, but swept in some quantity from a small stand of sorrel, *Rumex acetosa*, in June 1990. *A. hydrolapathi* (Marsh.): sparingly on dock, appearing to replace *A. violaceum* Kirby (formerly common in the district but not found for many years). *A. malvae* (F.) and *A. radiolus* (Marsh.): common and sometimes abundant on mallows. *A. aeneum* (F.) and *A. rufirostre* (F.): a pair of each from a young and rather isolated mallow, vi.90. *A. urticarium* (Hbst.): one off nettle, v.91. Probably a recent colonist (cf. Allen, 1990). *A. fuscirostre* (F.): several off an isolated plant of broom, v. & viii.92 – the first find in the district. *A. ulicis* (Forst.): a pair from a sickly straggling gorse plant, iv.91. General in the district, but gorse and broom do not thrive on the common and indeed seem now to have died out. *A. frumentarium* (L.) (=*miniatum* Germ.): on docks and by general sweeping, but never in any numbers. *A. haematodes* Kb.: has occurred in past years, more or less casually. *A. pubescens* Kb.: one swept from white clover, 11.viii.81. *A. carduorum* Kb.: general, but never plentiful. *A. onopordi* Kb.: on thistles like the last, but scarcer. *A. hookeri* Kb.: sparingly on *Matricaria chamomilla* by a path, first found vii.91; the plant appears very restricted on the common. *A. simile* Kb.: sometimes abundant on birch, at least in the last five to six years. The species has greatly increased in recent times (cf. Allen, 1981), at least in this district. *A. aethiops* Hbst.: infrequent and always singly, from vetches: first noted v.90. *A. pisi* (F.): as the last, but if anything scarcer (strange for a reputedly abundant species), first taken viii.81; one from *Vicia tetrasperma*, another apparently off *Medicago lupulina*. *A. ervi* Kb.: general and common on *Vicia* spp.; perhaps also on *Lathyrus* spp. *A. loti* Kb.: common and sometimes abundant on *Lotus corniculatus*, less so on *Lathyrus pratensis*. *A. tenue* Kb.: very local on lucerne, *Medicago sativa*, itself highly localised on the common: first in vii.91, later in numbers in one little area. *A. viciae* Kb.: quite frequent on the

tufted vetch, *Vicia cracca*. *A. virens* Hbst.: far from abundant as would be expected, and only in earlier years; e.g. v. & viii.81, a number swept from white clover. *A. vorax* Hbst.: one by general sweeping, iv.82; a most erratic species in my experience. *A. cerdo* Gerst.: first seen on 31.v.81 (1), subsequently found in some numbers on *Vicia cracca* (vii.82) and met with every year since; not uncommon. (See Allen, 1982.) *A. craccae* (L.): on the same host and on *V. tetrasperma*; first on 13.v.90; not common, male very scarce; chiefly spring and early summer. *A. pomonae* (F.): not found until 1991, and very erratic; several from *Vicia sativa*, 25.v, and a few more by sweeping about a young larch, with no obvious foodplant near, 4.viii. *A. subulatum* Kb.: not uncommon on *V. cracca* in the summer of 1990, but never met with before or since, which is very curious. *A. apricans* Hbst.: common and at times abundant on red clover (*Trifolium pratense*). *A. assimile* Kb.: mostly with the last, and nearly as common. *A. trifolii* (L.): at least as plentiful as *assimile*, or rather more so. *A. dichroum* Bed.: abundant in earlier years but less so latterly, mostly on the white clover (*T. repens*). *A. nigritarse* Kb.; decidedly rare, and occurring singly; this is understandable if it is confined to small yellow-flowered clovers, as on the Continent but not proved for Britain (Morris, 1990: 60). I have not noticed any of these on the common, but *T. campestre*, at least, may well be present.

Other species of *Apion* could occur there, and indeed the true total is probably nearer 40 species. Among the likeliest are *marchicum* Hbst., *semivittatum* Gyll., *seniculus* Kb., *confluens* Kb., and *meliloti* Kb., all of which have been found in the district; while two or three further vetch-feeding species may yet turn up.

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Caloptilia robustella Jackh. (Lep.: Gracillariidae) on Spanish Chestnut

While collecting at Cattering Wood, Wateringbury, Kent on 31st August 1993, Dennis O'Keeffe and I took a number of larval cones of a *Caloptilia* on Spanish Chestnut which produced moths of *C. robustella* in April 1994. So far as I am aware, Spanish Chestnut has not been recorded as a foodplant of *C. robustella*.– J.M. CHALMERS-HUNT, 1 Hardcourts Close, West Wickham, Kent.

A CHECK LIST OF THE MICROLEPIDOPTERA OF CARMARTHENSHIRE (VC44)

S.R. LUCAS

35 Maesquarre Road, Betws, Ammanford, Dyfed SA18 2LF.

Summary

A TOTAL OF 423 species of microlepidoptera represented in 25 families have been recorded from the vice-county 44 (Carmarthenshire). This number excludes those species which have traditionally been considered with the macrolepidoptera.

Review

This vice-county has for so many years been grossly neglected in its recording of many of the major taxonomic groups but especially of its invertebrates. Apart from a general lack of active recorders which still persists today, one factor may have been that the neighbouring vice-county of Ceredigion (Cardiganshire) has much more to offer both the amateur and professional lepidopterist. Indeed, searching through some 68 publications of *Nature in Wales* showed that from its inception in 1955, there were no microlepidoptera records for Carmarthenshire whilst the other Dyfed vice-counties of Pembrokeshire and Ceredigion at least had mention of species such as the Diamond-back Moth, *Plutella xylostella* (Linn.), and the rush veneer, *Nomophila noctuella* ([D. & S.]), indicating that observers were certainly aware of "micro" species particularly if they were important agricultural pests or were major migratory species.

None the less, the earliest records so far discovered come from T.W. Barker (1856) who noted 16 species (*Aglossa pinguinalis* (Linn.), *Nomophila noctuella* ([D. & S.]), *Pyrausta purpuralis* (Linn.), *Eurrhypara urticata* (Linn.) (now *E. hortulata* (Linn.)), *Botys* (now *Microstega*) *pandalis* (Hb.), *Ebulea sambucalis* ([D. & S.]) now *Phlyctaenia coronata* (Hufn.), *E.* (now *Phlyctaenia*) *stachydalis* (Germ.), *Pionea* (now *Evergestis*) *forficalis* (Linn.), *Perinephela lancealis* ([D. & S.]), *Diasemia literata* (Scop.), *Crambus pratellus* (Linn.) (now *C. lathoniellus*) (Zinck.), *C. tristellus* (now *Agriphila tristella*) ([D. & S.]), *C. culmellus* (Linn.) (now *Agriphila straminella* ([D. & S.])), *C. hortuellus* (Hb.) (now *Chrysoteuchia culmella* Linn.)), *Acipitilia* (now *Pterophorous*) *pentadactyla* (Linn.), *Alucita hexadactyla* (Linn.). These particular recordings were made within the vicinity of Carmarthen and the nearby village of Oaklands although six of the species were not actually seen by him. Searches have yet to be made of other publications.

The main source of records, 636 from a total of 2477, has come from the Rothamsted light trap situated at Rhandirmwyn (22/782441) since 1978. The trap is operated nightly with the operator emptying the trap and sending the collections to the Experimental Station at Rothamsted for identification and

recording. Figure 1 shows the numbers of microlepidoptera species recorded for each of the years 1978 to 1992 at Rhandirmwyn as identified from the annual returns. A total of 242 species has been recorded at this site alone. J.D. Bradley carried out the determinations up until 1980 (J.D. Bradley, pers. comm.) and thereafter R.H. Palmer continued until 1989 (A. Riley, pers. comm.).

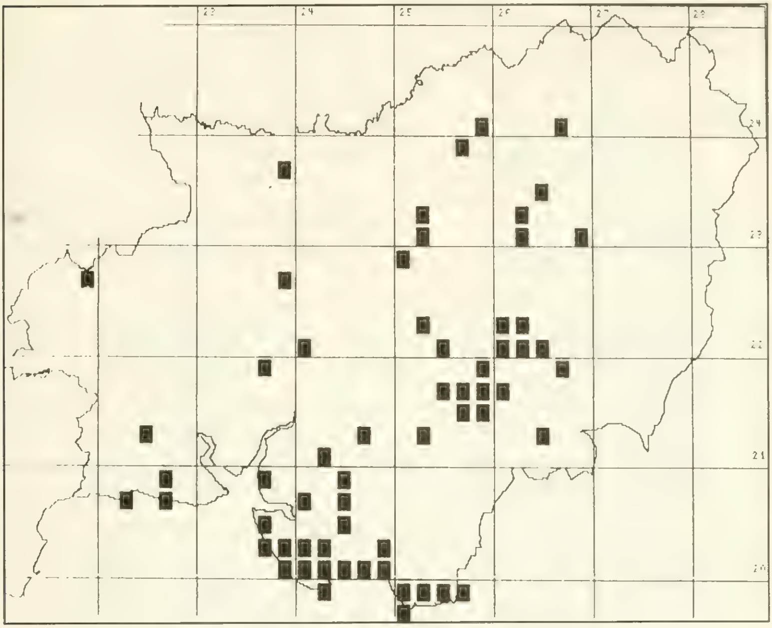
Year	Nos	Year	Nos	Year	Nos
1978	0	1983	69	1988	120
1979	142	1984	80	1989	136
1980	137	1985	102	1990	2
1981	45	1986	38	1991	0
1982	14	1987	120	1992	3

Fig. 1. Annual number of microlepidoptera species recorded 1978 – 1992

Apart from those reporting the more readily identifiable microlepidoptera such as Mother of Pearl, *Pleuroptera ruralis*, a frequent capture during the summer months, the number of active recorders noting the micro species remains pitifully small. A.M. Emmet was able to provide details of 69 species which were not present in the county recorder's files. Some came from his own observations whilst travelling through Carmarthenshire in 1974, whilst others originate from a holiday he shared with other eminent entomologists notably the late E.C. Pelham-Clinton, J.D. Bradley and the late D.W.H. Fennell in Carmarthenshire during July 1975, and from a visit he made in September 1990 with J.R. Langmaid. Other earlier contributors include the late John Heath, I.A. Watkinson, M.W. Harper, P.A. Sokoloff, E.F. Hancock and L.W. Hardwick. Unfortunately some of these earlier records lack sources.

More recently, from 1991 through to the late summer of 1993, the only recorder taking an active interest in microlepidoptera was B. Stewart who at that time was gradually becoming involved in the identification of this difficult group. The casual identification of the more readily recognisable species such as the Bee Moth, *Aphomia sociella* (Linn.), was confined to general moth recorders such as I.K. Morgan, A. Lucas and the author. Map 1 shows the distribution of all the microlepidoptera records within Carmarthenshire and are presented on a tetrad basis. The map was produced using BIORECS.

From the available distribution maps/descriptions of the species recorded, the status of these species is varied both within the Principality and nationally and the majority of species are particularly common. There is one which is the first record for Wales; *Lobesia abscisana* (Doubl.) (1986 22/782441) a grassland/wasteland inhabitant whose larvae feed on creeping thistle (*Cirsium arvense*); *Spatalistis bifasciana* (Hb.) (17.vii.87 22/782441)



Map. All records for VC44 (Carmarthenshire)

whose larval foodplants include the buckthorns (*Rhamnus catharticus* and *Frangulus alnus*), is probably a second Welsh record as are *Stigmella prunetorum* (Stt.) (18.viii.91 21/533984 and 22/434012) and *Incurvaria praelatella* ([D. & S.]) (viii.75 unknown) a species of heathlands associated with sandy soils and downlands.

A few are locally common either throughout Britain or within Wales. *Stigmella spinosissimae* (Waters) has been recorded from only six counties throughout Great Britain of which two are from the Principality. The following species have been previously recorded in four or fewer of the 13 Welsh counties: *Caloptilia robustella* (Jäckh) (4) a species mainly confined to the south-east of England but rare in the west of Britain; *Eriocrania sangii* (Wood) (2), *Stigmella svenssoni* (Johan.) (3), *Stigmella incognitella* (H.-S.) (*pomella* (Vaugh.)) (4), *Stigmella glutinosae* (Stt.) (4), *Adela cuprella* ([D. & S.]) (3), *Monopis weaverella* (Scott) (3), *Monopis crocicapitella* (Clem.) (4), and *Eana penziana* ssp. *colquhounana* (Barr.) (3). This latter species is a particularly noteworthy find as it normally occurs from the Shetlands to North Wales. If this is confirmed then it represents a major extension of its range (A.M. Emmet, pers. comm.).

The following species list follows that in *The Moths and Butterflies of Great Britain and Ireland*, Volume 7 part 2 by Emmet and Heath and the numbering system is that of Bradley and Fletcher.

MICROPTERIGOIDEA
MICROPTERIGIDAE
1 *Micropterix tunbergella* (Fabr.)
5 *M. calthella* (Linn.)

ERIOCRANIOIDEA
ERIOCRANIIDAE
6 *Eriocrania subpurpurella* (Haw.)
12 *E. sangii* (Wood)

NEPTICULOIDEA
NEPTICULIDAE
25 *Ectoedemia intimella* (Zell.)
28 *E. angulifasciella* (Stt.)
29 *E. atricollis* (Stt.)
34 *E. occultella* (Linn.)
35 *E. minimella* (Zett.)
37 *E. albifasciella* (Hein.)
39 *E. heringi* (Toll)
40 *Bohemannia pulverosella* (Stt.)
42 *Formoria septembrella* (Stt.)
46 *Trifurcula immundella* (Zell.)
48 *T. cryptella* (Stt.)
50 *Stigmella aurella* (Fabr.)
52 *S. dulcella* (Hein.)
53 *S. splendidissimella* (H.-S.)
63 *S. marginicolella* (Stt.)
66 *S. sorbi* (Stt.)
67 *S. plagicolella* (Stt.)
68 *S. salicis* (Stt.)
72 *S. myrtillella* (Stt.)
73 *S. trimaculella* (Haw.)
75 *S. floslactella* (Haw.)
77 *S. tityrella* (Stt.)
78 *S. incognitella* (H.-S.)
(*pomella* (Vaugh.))
79 *S. perpygmaeella* (Doubl.)
81 *S. hemargyrella* (Koll.)
82 *S. paradoxa* (Frey)
83 *S. atricapitella* (Haw.)
84 *S. ruficapitella* (Haw.)
87 *S. svenssoni* (Johan.)
92 *S. anomalella* (Goeze)
94 *S. spinosissimae* (Waters)
99 *S. hybnerella* (Hb.)
100 *S. oxycanthella* (Stt.)
103 *S. nylandriella* (Tengst.)
104 *S. magdalenae* (Klim.)
108 *S. crataegella* (Klim.)
109 *S. prunetorum* (Stt.)
111 *S. microtheriella* (Stt.)
113 *S. sakhalinella* Pupl.
114 *S. glutinosae* (Stt.)
116 *S. lapponica* (Wocke)
117 *S. confusella* (Wood)

OPOSTEGIDAE
119 *Opostega salaciella* (Treit.)

TISCHERIOIDEA
TISCHERIIDAE
123 *Tischeria ekebladella* (Bjerk.)
125 *Emmetia marginea* (Haw.)

INCURVARIOIDEA
INCURVARINAE
128 *Phylloporia bistrigella* (Haw.)
130 *Incurvaria masculella* ([D. & S.])
131 *I. oehlmanniella* (Hb.)
132 *I. praelatella* ([D. & S.])

PRODOXINAE
135 *Lampronia luzella* (Hb.)

NEMATOPOGONINAE
140 *Nematopogon swammerdamella* (Linn.)
141 *N. schwarziellus* (Zell.)

ADELINAE
148 *Nemophora degreerella* (Linn.)
149 *Adela cuprella* ([D. & S.])
150 *A. reaumurella* (Linn.)

HELIOZELIDAE
154 *Heliozela sericiella* (Haw.)
156 *H. resplendella* (Stt.)
157 *H. hammoniella* (Sorh.)
158 *Antispila metallella* ([D. & S.])

TINEOIDEA
TINEIDAE
NEMAPOGONINAE
216 *Nemapogon cloacella* (Haw.)
220 *N. clematella* (Fabr.)

TINEINAE
227 *Monopis laevigella* ([D. & S.])
228 *M. weaverella* (Scott)
230 *M. crocicapitella* (Clem.)
245 *Tinea pallescentella* (Stt.)
246 *T. semifulvella* (Haw.)
247 *T. trinotella* (Thunb.)

LYONETIIDAE
CEMIOSTOMINAE
254 *Leucoptera laburnella* (Stt.)

LYONETIINAE
263 *Lyonetia clerckella* (Linn.)

BUCCULATRICIDAE
267 *Bucculatrix maritima* (Stt.)
272 *B. cidarella* (Zell.)
276 *B. demaryella* (Dup.)

GRACILLARIIDAE
GRACILLARIINAE
282 *Caloptilia elongella* (Linn.)
283 *C. betulicola* (Her.)
286 *C. alchimiella* (Scop.)
287 *C. robustella* Jäckh
288 *C. stigmatella* (Fabr.)
290 *C. semifascia* (Haw.)
293 *C. syringella* (Fabr.)
294 *Aspilapteryx tringipennella* (Zell.)

301 *Parornix betulae* (Stt.)
303 *P. anglicella* (Stt.)
304 *P. devoniella* (Stt.)
305 *P. scoticella* (Stt.)
308 *P. finimitella* (Stt.)
309 *P. torquillella* (Zell.)
310 *Callisto denticulella* (Thunb.)

LITHOCOLLETINAE
315 *Phyllonorycter harrisella* (Linn.)
317 *P. heegeriella* (Zell.)
320 *P. quercifoliella* (Zell.)
321 *P. messaniella* (Zell.)
323 *P. oxyacanthae* (Frey)
324 *P. sorbi* (Frey)
326 *P. blancardella* (Fabr.)
329 *P. spinicolella* (Zell.)
332 *P. corylifoliella* (Hb.)
333 *P. viminiella* (Sirc.)
335 *P. salicicolella* (Sirc.)
338 *P. cavella* (Zell.)
341 *P. maestingella* (Müll.)
342 *P. coryli* (Nic.)
345 *P. rajella* (Linn.)
348 *P. quinqueguttella* (Stt.)
351 *P. lautella* (Zell.)
353 *P. ulmifoliella* (Hb.)
359 *P. nicellii* (Stt.)
360 *P. kleemannella* (Fabr.)
361 *P. trifasciella* (Haw.)
364 *P. geniculella* (Rag.)

PHYLLOCNISTINAE
368 *Phyllocnistis unipunctella* (Steph.)

SESIOIDEA
CHOREUTIDAE
385 *Anthophila fabriciana* (Linn.)

YPONOMEUTOIDEA
GLYPHIPTERIGIDAE
391 *Glyphipterix simpliciella* (Steph.)
394 *G. forsterella* (Fabr.)
396 *G. fuscoviridella* (Haw.)
397 *G. thrasonella* (Scop.)

YPONOMEUTIDAE
ARGYRESTHIINAE
410 *Argyresthia brockeella* (Hb.)
411 *A. goedartella* (Linn.)
412 *A. pygmaeella* ([D. & S.])
414 *A. arcella* (Fabr.)
415 *A. retinella* (Zell.)
417 *A. spinosella* (Stt.)
418 *A. conjugella* (Zell.)
420 *A. pruniella* (Cl.)
421 *A. bonnetella* (Linn.)
422 *A. albistria* (Haw.)

YPONOMEUTINAE
424 *Yponomeuta evonymella* (Linn.)
425 *Y. padella* (Linn.)
427 *Y. cagnagella* (Hb.)
435 *Zellaria hepariella* (Stt.)
436 *Pseudoswammerdamia combinella* (Hb.)
437 *Swammerdamia caesiella* (Hb.)
438 *S. pyrella* (Vill.)
440 *Paraswammerdamia albicapitella* (Scharf.)
441 *P. lutarea* (Haw.)
443 *Cedestis subfasciella* (Steph.)
449 *Prays fraxinella* (Bjerk.)

PLUTELLINAE
453 *Ypsolopha dentella* (Fabr.)
460 *Y. parenthesella* (Linn.)
461 *Y. ustella* (Cl.)
464 *Plutella xylostella* (Linn.)
465 *P. porrectella* (Linn.)
469 *Eidophasia messingiella* (F. v. R.)

ORTHOTELIINAE
470 *Orthotelia sparganella* (Thunb.)
472 *Digitivalva pulicariae* (Klim.)

SCHRECKENSTEINIIDAE
485 *Schreckensteinia festaliella* (Hb.)

GELECHIOIDEA
COLEOPHORIDAE
490 *Coleophora lutipennella* ((Zell.)
491 *C. gryphipennella* (Hb.)
492 *C. flavipennella* (Dup.)
493 *C. serratella* (Linn.)
501 *C. siccifolia* Stt.
504 *C. lusciniaepennella* (Treit.) (*viminetella* Zell.)
519 *C. deauratella* (Lien. & Zell.)
526 *C. laricella* (Hb.)
536 *C. betulella* (Hein. & Wocke) (*ibipenella sensu auctt.*)
544 *C. albicosta* (Haw.)
547 *C. discordella* (Zell.)
553 *C. striatipennella* (Nyl.)
555 *C. follicularis* (Vallot)
556 *C. trochilella* (Dup.)
560 *C. paripennella* (Zell.)
582 *C. glaucicolella* Wood
584 *C. alticolella* Zell.

ELACHISTIDAE
594 *Elachista gleichenella* (Fabr.)
597 *E. atricomella* Stt.
600 *E. luticmella* Zell.
601 *E. albifrontella* (Hb.)
606 *E. humilis* Zell.
607 *E. canapennella* (Hb.)
608 *E. rufocinerea* (Haw.)
610 *E. argentella* (Cl.)
621 *E. subalbidella* Schläg.
633 *Cosmiotes stabilella* (Stt.)

OECOPHORIDAE
OECOPHORINAE
644 *Borkhausenia fuscescens* (Haw.)
647 *Hofmannophila pseudospretella* (Stt.)
648 *Endrosis sarcitrella* (Linn.)
649 *Esperia sulphurella* (Fabr.)
658 *Carcina quercana* (Fabr.)
660 *Pseudatemelia josephinae* (Toll)

CHIMBACHINAE
663 *Diurnea fagella* ([D. &S.])
664 *D. phryganella* (Hb.)

DEPRESSARIINAE
666 *Semioscopis avellanella* (Hb.)
670 *Depressaria daucella* ([D. & S.])
672 *D. pastinacella* (Dup.)
676 *D. pulcherrimella* (Stt.)
688 *Agonopterix heracliana* (Linn.)
689 *A. ciliella* (Stt.)
692 *A. subpropinquella* (Stt.)
696 *A. propinquella* (Treit.)
697 *A. arenella* ([D. & S.])
698 *A. kaekeritziana* (Linn.)
700 *A. pallorella* (Zell.)
701 *A. ocellana* (Fabr.)
702 *A. assimilella* (Treit.)
705 *A. ulicetella* (Stt.)
706 *A. nervosa* (Haw.)
710 *A. conterminella* (Zell.)

GELECHIIDAE
ARISTOTELIINAE
735 *Monochroa tenebrella* (Hb.)

GELECHIINAE
756 *Parachronistis albiceps* (Zell.)
767 *Teleoides decorella* (Haw.)
774 *T. luculella* (Hb.)
776 *Teleopsis diffinis* (Haw.)
782 *Bryotropha senectella* (Zell.)
787 *B. terrella* ([D. & S.])
792 *Mirificarma mulinella* (Zell.)
794 *Lita sexpunctella* (Fabr.)
797 *Neofaculta ericetella* (Geyer)
802a *Gelechia sororculella* (Hb.)
819 *Scrobipalpa costella* (Humph. & Westw.)
820 *S. artemisiella* (Treit.)
822 *S. acuminatella* (Sirc.)
834 *Caryocolum tricolorella* (Haw.)

ANACAMPSINAE
853 *Anacampsis populella* (Cl.)
855 *Acompsia cinerella* (Cl.)

CHELARIINAE
856 *Anarsia spartiella* (Schr.)
858 *Hypatima rhomboidella* (Linn.)
859 *Psoricoptera gibbosella* (Zell.)

DICHOMERINAE
868 *Brachmia rufescens* (Haw.)

BLASTOBASIDAE
873 *Blastobasis lignea* (Wals.)

MOMPHIDAE
MOMPHINAE
883 *Mompha raschkiella* (Zell.)
892 *M. subbistrigella* (Haw.)
893 *M. epilobiella* ([D. & S.])

COSMOPTERIGIDAE
COSMOPTERIGINAE
905 *Blastodacna hellerella* (Dup.)

TORTRICOIDEA
TORTRICIDAE
COCHYLINAE
926 *Phalonidia manniana* (F.v.R.)
928 *Piercea permixtana* ([D. & S.])
936 *Cochylimorpha straminea* (Haw.)
937 *Agapeta hamana* (Linn.)
938 *A. zoegana* (Linn.)
939 *Aethes tesserana* ([D. & S.])
945 *A. cnicana* (Brahm)
946 *A. rubigana* (Treit.)
954 *Eupoecilia angustana* (Hb.)
959 *Cochylidia rupicola* (Curt.)
966 *Cochylis atricapitana* (Steph.)

TORTRICINAE
969 *Pandemis corylana* (Fabr.)
970 *P. cerasana* (Hb.)
971 *P. cinnamomeana* (Treit.)
972 *P. heparana* ([D. & S.])
977 *Archips podana* (Scop.)
980 *A. xylosteana* (Linn.)
981 *A. rosana* (Linn.)
986 *Syndemis musculana* spp. *musculana* (Hb.)
988 *Aphelia viburnana* ([D. & S.])
989 *A. paleana* (Hb.)
993 *Clepsis spectrana* (Treit.)
994 *C. consimilana* (Hb.)
1000 *Ptycholoma lecheana* (Linn.)
1002 *Lozotaenia forsterana* (Fabr.)

1006 *Epagoge grotiana* (Fabr.)
1007 *Capua vulgana* (Fröl.)
1010 *Ditula angustiorana* (Haw.)
1011 *Pseudargyrotoza conwagana* (Fabr.)
1015 *Eulia ministrana* (Linn.)
1020 *Cnephasia stephensiana* (Doubl.)
1024 *C. incertana* (Treit.)
1025 *Tortricodes alternella* ([D. & S.])
1029 *Eana osseana* (Scop.)
1031 *Eana penziana* spp. *colquhounana* (Barr.)
1032 *Aleimma loeflingiana* (Linn.)
1033 *Tortrix viridana* (Linn.)
1034 *Spatalistis bifasciana* (Hb.)
1035 *Acleris bergmanniana* (Linn.)
1037 *A. holmiana* (Linn.)
1038 *A. laterana* (Fabr.)

1039 *A. comariana* (Lien. & Zell.)
1041 *A. sparsana* ([D. & S.])
1042 *A. rhombana* ([D. & S.])
1043 *A. aspersana* (Hb.)
1044 *A. ferrugana* ([D. & S.])
1045 *A. notana* (Don.)
1048 *A. variegana* ([D. & S.])
1053 *A. hastiana* (Linn.)
1055 *A. hyemana* (Haw.)
1061 *A. literana* (Linn.)
1062 *A. emargana* (Fabr.)

OLETHREUTINAE
1063 *Celypha striana* ([D. & S.])
1064 *C. rosaceana* (Schläg.)
1065 *C. rufana* (Scop.)
1076 *Olethreutes lacunana* ([D. & S.])
1079 *O. bifasciana* (Haw.)
1082 *Hedya pruniana* (Hb.)
1083 *H. dimidioalba* (Retz.)
1084 *H. ochroleucana* (Fröl.)
1085 *H. atropunctana* (Zett.)
1087 *Orthotaenia undulana* ([D. & S.])
1089 *Apotomis semifasciana* (Haw.)
1092 *A. turbidana* (Hb.)
1093 *A. betuletana* (Haw.)
1096 *A. sauciana* (Fröl.)
1099 *Endothenia marginana* (Haw.)
1103 *E. ericetana* (Humph. & Westw.)
1104 *E. quadrimaculana* (Haw.)
1108 *Lobesia abscisana* (Doubl.)
1110 *Bactra furfurana* (Haw.)
1111 *B. lancealana* (Hb.)
1113 *Eudemis profundana* ([D. & S.])
1120 *Ancylis mitterbacheriana* ([D. & S.])
1126 *A. badiana* ([D. & S.])
1128 *A. myrtillana* (Treit.)
1132 *Epinotia subocellana* (Don.)
1134 *E. ramella* (Linn.)
1136 *E. immundana* ((F.v.R.)
1138 *E. nisella* (Cl.)
1139 *E. tenerana* ([D. & S.])
1142 *E. tedella* (Cl.)
1144 *E. signatana* (Dougl.)
1147 *E. cruciana* (Linn.)
1150 *E. abbreviana* (Fabr.)
1151 *E. trigonella* (Linn.)
1152 *E. maculana* (Fabr.)
1154 *E. caprana* (Fabr.)
1155 *E. brunnichana* (Linn.)
1156 *Spinotia solandriana* (Linn.)
1159 *Rhopobota naevana* (Hb.)
1163 *Zeiraphera ratzeburgiana* (Ratz.)
1165 *Z. isertana* (Fabr.)
1166 *Z. diniana* (Guen.)
1168 *Gypsonoma sociana* (Haw.)
1169 *G. dealbana* (Fröl.)
1174 *Epiblema cynosbatella* (Linn.)
1175 *E. uddmanniana* (Linn.)
1176 *E. trimaculana* (Haw.)
1177 *E. rosaecolana* (Doubl.)
1178 *E. roborana* ([D. & S.])
1179 *E. incarnatana* (Hb.)
1184 *E. scutulana* ([D. & S.])
1184a *E. cirsiana* (Zell.)
1187 *E. costipunctana* (Haw.)
1197 *Eucosma campoliliana* ([D. & S.])
1200 *E. hohenwartiana* ([D. & S.])
1200a *E. fulvana* (Steph.)
1201 *E. cana* (Haw.)
1202 *E. obumbratana* (Lien. & Zell.)
1205 *Spilonota ocellana* ([D. & S.])
1207 *Clavigesta purdeyi* (Durr.)
1210 *Rhyacionia buoliana* ([D. & S.])
1219 *Lathronympha strigana* (Fabr.)
1236 *Pammene fasciana* (Linn.)
1241 *Cydia compositella* (Fabr.)
1251 *C. jungiella* (Cl.)
1255 *C. succedana* ([D. & S.])
1260 *C. splendana* (Hb.)
1261 *C. pomonella* (Linn.)
1276 *Dichrorampha plumbagana* (Treit.)
1268 *D. sedatana* (Busck)

ALUCITIDEA
ALUCITIDAE
1288 *Alucita hexadactyla* (Linn.)

PYRALOIDEA
PYRALIDAE
CRAMBINAE
1290 *Chilo phragmitella* (Hb.)
1293 *Chrysoteuchia culmella* (Linn.)
1294 *Crambus pascuella* (Linn.)
1301 *C. lathoniellus* (Zinck.)
1302 *C. perlella* (Scop.)
1303 *Agriphila selasella* (Hb.)
1304 *A. straminella* ([D. & S.])
1305 *A. tristella* ([D. & S.])
1306 *A. inquinatella* ([D. & S.])
1307 *A. latistria* (Treit.)
1309 *A. geniculea* (Haw.)
1313 *Catoptria pinella* (Linn.)
1314 *C. margaritella* ([D. & S.])

SCOPARIINAE
1332 *Scoparia subfusca* (Haw.)
1333 *S. pyralella* ([D. & S.])
1334 *S. ambigualis* (Treit.)
1336 *Eudonia pallida* (Curt.)
1338 *Dipleurina lacustrata* (Panz.)
1340 *E. truncicolella* (Stt.)
1342 *E. angustea* (Curt.)
1343 *E. delunana* (Stt.)
1344 *E. mercurella* (Linn.)

NYMPHULINAE
1345 *Elophila nymphaeata* (Linn.)
1348 *Parapoynx stratiotata* (Linn.)
1350 *Nymphula stagnata* (Don.)
1354 *Cataclysta lemnata* (Linn.)

EVERGESTINAE
1356 *Evergestis forficalis* (Linn.)
1358 *E. pallidata* (Hufn.)

PYRAUSTINAE
1361 *Pyrausta aurata* (Scop.)
1362 *P. purpuralis* (Linn.)
1363 *P. ostrinalis* (Hb.)
1365 *P. cespitalis* ([D. & S.])
1367 *P. cingulata* (Linn.)
1370 *Sitochroa palealis* ([D. & S.])
1371 *S. verticalis* (Linn.)
1373 *Microstega pandalis* (Hb.)
1376 *Eurrhypara hortulata* (Linn.)
1377 *Perinephela lancealis* ([D. & S.])
1378 *Phlyctaenia coronata* ([D. & S.])
1385 *Ebulea crocealis* (Hb.)
1386 *Opsibotys fuscalis* ([D. & S.])
1388 *Udea lutealis* (Hb.)
1390 *U. prunalis* ([D. & S.])
1392 *U. olivalis* ([D. & S.])
1395 *U. ferrugalis* (Hb.)
1398 *Nomophila noctuella* ([D. & S.])
1402 *Diasemia reticularis* (Linn.)
1405 *Pleuroptya ruralis* (Scop.)

PYRALINAE
1413 *Hypsopygia costalis* (Fabr.)
1424 *Endotricha flammealis* ([D. & S.])

GALLERIINAE
1428 *Aphomia sociella* (Linn.)

PHYCITINAE
1432 *Anerastia lotella* (Hb.)
1433 *Cryptoblabes bistriga* (Haw.)
1436 *Acrobasis repandana* (Fabr.)
1439 *Numonia advenella* (Zinck.)
1440 *N. marmorea* (Haw.)
1451 *Pyla fusca* (Haw.)
1452 *Phycita roborella* ([D. & S.])
1454 *Dioryctria abietella* ([D. & S.])
1457 *Hypochalcia ahenella* ([D. & S.])
1458 *Myelois cribrella* (Hb.)
1474 *Ephestia parasitella* spp. *inicolorella* (Stdgr.)
1481 *Homoeosoma sinuella* (Fabr.)
1483 *Phycitodes binaevella* (Hb.)
1484 *P. saxicola* (Vaugh.)
1485 *P. maritima* (Tengst.)

PTEROPHOROIDEA
PTEROPHORIDAE
PLATYPTILIINAE
1495 *Marasmarcha lunaedactyla* (Haw.)
1497 *Amblyptilia acanthadactyla* (Hb.)
1498 *A. punctidactyla* (Haw.)
1500 *Platyptilia calodactyla* ([D. & S.])
1504 *P. pallidactyla* (Haw.)
1508 *Stenoptilia bipunctidactyla* (Scop.)

PTEROPHORINAE
1513 *Pterophorus pentadactyla* (Linn.)
1524 *Emmelina monodactyla* (Linn.)

Acknowledgements

I would like to thank all those for their assistance in the production of this paper with gratitude to A.M. Emmet for the provision of additional records and proof reading the type script of this paper and I.K. Morgan for allowing me access to the county records.

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Hazards of butterfly collecting – Managing Hotel de France Madagascar, 1982

I was lucky enough to have a weekend free for butterfly collecting in Mahajunga in the northwestern coastal zone of Madagascar. The rest of my party were down with some gastric disorder, and in those days Mahajunga was so far afield that its illness did not even have a name – like Delhi Belly or Moctezuma's Revenge. All my previous experience in Madagascar had been in the highlands and in the wet forests of eastern Madagascar, including that most famous locality, Perinet, and the contrast is quite remarkable. Mahajunga is very dry, and strongly influenced by the Arab presence, which dates back more than 700 years, being at its strongest when the Sultans of Oman held sway over Zanzibar. Mostly the butterfly fauna resembles that of the drier coastal areas of East Africa, but in wooded valleys, elements of the true Malagasy fauna prevail. Nearly two thirds of all Malagasy butterflies are endemic, a testimony to the fact that continental drift cut off Madagascar a long time ago – probably about 60 million years, though rejoining in the Oligocene – and this obviously makes collecting fascinating.

However, a few days in the field makes you wonder how endemic this fauna really is. It does not feel very different, and in truth it is not. Most of the few endemic genera are grass-eating Satyrinae and Hesperiinae, not very different from other genera present in both Madagascar, Africa and Asia. The bulk of Malagasy endemics are species in African genera, closely allied to extant African species. Then there are the very few that have Oriental affinities, not least that splendid red-bodied swallowtail, *Atrophaneura philenor*. How does one interpret this pattern? There are clear examples of recent contact between Africa and Madagascar. Not only is the common *Papilio demodocus* present, but so are three closely allied species, which show that this butterfly has reached the island several times, and managed to speciate before the next invasion. The distance is not far, so this type of contact almost certainly has kept butterfly speciation slower than it would otherwise have been. I take most other Malagasy endemics as proof that

butterflies may evolve quite slowly, and have done so slowly in Madagascar. Why it is that the most marked endemics at generic level are all grass-feeders? I do not know. The evolutionary history of grasses must have something to do with it, but so far this is virgin territory to me.

Among the things I did that weekend was to taste as many aposematic butterflies a possible, till my research was terminated by a particularly nasty *Danaus chrysippus*, which left my mouth and tongue with blisters, an experience on which I have previously commented, in a more serious vein, in this *Journal* (1983, *Ent. Rec. J. Var.*, **95**: 66-67).

The night was spent in Hotel de France, a pleasant little place in the style of a provincial French *Hotel de Gare*. The remarkably comprehensive, beautifully handwritten, menu promised oysters – at less than a pound Sterling a dozen. They were excellent, and I had oysters for breakfast, lunch, and dinner three days in a row. The rest of the food was fine as well, but though my companions recovered, they did not touch the oysters. Not bad for the boondocks of Madagascar – but, then, it *was* a French colony.

On the second evening the manager inquired whether he might offer a drink on the house, and sat down to share coffee. We talked of our work in family planning, of oysters, butterflies, the difficult economical situation, the unreliability of Mad Air (yes, they did call it that!), and other important matters. We finally, a few cognacs later, got on to the subject that was making us increasingly curious, namely the nationality of our host. He was not Malagasy, nor of a mixed race, nor European. His French was perfect, but accented, though not in the North African or Levantine manner. Nothing seemed to fit. We finally reached the point where a direct question did not seem impolite: "*Ah, moi, je suis Afghan*"! Surely, there must be a story behind that.

There was. He came from one of the traditional, monarchist families in Afghanistan, which had Francophile instincts. He was sent to the Sorbonne, where he met a nice Malagasy girl, and married. The Russians offered their massive fraternal assistance to Afghanistan in 1979, and he could not go back. So he got a job with Alitalia in Paris, having obtained refugee status. Alitalia began services to Madagascar, his wife was homesick, so what could be more natural than accepting promotion to become assistant station manager in Antananarivo. It did not take Alitalia long to realise that its route to Antananarivo was not commercially viable, so they closed down. In the meantime his wife had decided she did not want to leave Madagascar – and, in truth, the Malagasy generally do not thrive away from their natural habitat – while he had nowhere to go. So here he was, the only Afghan within a thousand miles of Mahajanga, doing a splendid job, doubtless to be rewarded soon with a better job in the more cosmopolitan Antananarivo! "*Sante!*", says our host for the last time. It was time to go to bed.

I had my last plate of oysters before the flight next morning. It was with the compliments of the house.– T.B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

EUPLECTUS BRUNNEUS GRIMM. (COL.: PSELAPHIDAE) AND ITS STATUS IN BRITAIN

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THIS, OUR LARGEST and most robust *Euplectus*, is also our rarest with only a single authenticated specimen on record up to now (Cobham Park, West Kent, 30.vii.1873, J.J. Walker, in coll. G.C. Champion). One object of these notes is to point out the existence of a second, from the same locality, which has remained unrecorded, having been found in the late Dr A.M. Massee's collection doing duty as *E.* "*aubeanus*" (ie. *duponti* Aubé). It bears the data "Cobham Park/7.vii.43" and, like the first, is a male and was probably taken under bark with ants. The identity of this example was suggested by Mr Colin Johnson and later confirmed by myself; it agrees in all respects with the earlier one. The statement that *E. brunneus* was "last recorded in 1943" (Hyman & Parsons, 1994: 75) is at fault: it clearly refers to the Massee specimen (from data supplied by me), but the beetle had not even been identified as *brunneus* in 1943, let alone recorded!

Up to as late as 1974, it would seem – and in spite of Champion's correct recognition of the species in 1909 – the name *brunneus* was constantly misapplied to an allied but distinctly smaller and less rare species, *E. bescidicus* Reitt. (=*bohemicus* Mach.). The error was eventually corrected by Pearce (1974:16). The few published records of *E. brunneus* since Champion's are therefore at best highly suspect and must generally be referred to *E. bescidicus*. Such, for instance, is that by Osborne (1958) of a specimen from Oxford, named by the Rev. Pearce who was at that time using the name *brunneus* for what was later ascertained to be *bescidicus* (as in the 1957 Pselaphid "handbook", p.17). However, one or two earlier putative *brunneus* specimens may prove to be correct, and certainly need checking: notably that taken "under bark with Myrmica at Wytham" near Oxford, by J. Collins (Fowler & Donisthorpe, 1913: 251), which I have not seen. B.S. Williams (ref. not to hand) recorded *both* these species from Hertfordshire, so here too the former (*brunneus*) may possibly be genuine. (On the original *besidicus* records see Pearce, 1974: 16.) The Hope Department's (Oxford) exponents of the rarer species, which through the kindness of the Curator, Dr C. O'Toole, I have recently seen, are all *E. bescidicus* from Arden Hall, Cheshire, where the late Wm. Potter met with it in plenty on one occasion, in an old log.

Champion's male *E. brunneus* in the Natural History Museum, London, has been confirmed by Dr C. Besuchet, as also has a male *E. bescidicus* from Arden Hall placed alongside for comparison. Many years ago I was able to examine them and noted the following points which may be useful: *brunneus* is plainly larger and broader with the forehead finely punctured and microsculptured right across, instead of impunctate on disc and very shining; apical antennal segment longer and cylindrical instead of elliptic-ovate; the

minute subapial tooth on inner margin of front tibia (in male) situated further from apex; first dorsal stria of the more ample elytra markedly longer, reaching middle or nearly so; and the pair of fine raised lines on the basal tergites strongly divergent, instead of (at most) only feebly.

Before leaving the subject of *Euplectus*, I think it advisable to notice an extraordinary statement (Pearce, 1974: 17) to the effect that *E. decipiens* Raf. and *E. punctatus* Muls. are doubtfully distinct – an opinion attributed to Dr Besuchet *in litt.* Yet it has always been accepted that *decipens* is one of the larger species very close to *bescidicus*, but *punctatus* one of the smaller and coming in the group with *fauveli* Guil. and its allies. In fact they contrast in almost all respects. Thus (what is surely conclusive) Dr Besuchet himself, in his key (1974), separates them widely, associating them respectively with the two species just mentioned and in no way with each other, and giving them quite different male ventral characters. Finally, his figures of the aedeagi of the two species are utterly different! In Jeannel (1950), also, they are in separate subgenera. In the light of these facts, what is one to make of the above statement? Without some explanation, it is so contrary to received knowledge that I consider it should be ignored. Furthermore, the revised synonymic checklist at the end of the same paper, as far as *Euplectus* is concerned, is in part muddled and should not be used. The version given in the current checklist (Pope, 1977, 42), which differs considerably, is to the best of my knowledge correct; although *nanus* sensu Fowler, Joy *et al.* should be added as a synonym of *kirbyi* Denny.

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DISTRIBUTION OF PROTURANS (HEXAPODA) IN A DECIDUOUS WOODLAND IN SOUTH WALES

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Introduction

THE PROTURA, first described by Silvestri (1907), were initially thought to be apterygote insects, but are now considered to have class status (Kristensen, 1981). Their taxonomy has been worked upon by Gisin (1960), Tuxen (1964) and Nosek (1973) who divided them into three families, the Eosentomidae, Protentomidae and Acerentomidae. Protura occur in grassland and agricultural soils (Salt, Hollick, Raw & Brian, 1948; Lagerlöf & Andrén, 1991) where Raw (1956) considered them to be rare insects. It has been shown however, that considerable numbers may occur in some forest habitats (Nosek, 1975). Proturans favour moist, organic soils, which are not too acid and many are restricted to the top 10cm (Kuhnelt, 1961).

Tuxen (1931) tentatively suggested that their distribution may be affected by pH of the habitat. *Eosentomon armatum* Condé occurs in neutral or slightly alkaline soils though it tolerates a range of acidity, whilst *Acerentomon doderi* Silvestri prefers slightly acid soils (Raw, 1956). Little is known regarding their feeding habits, though Sturm (1959) reported that species of *Acerentomon* and *Eosentomon* feed on the contents of fungal hyphae.

Nosek (1963) recorded several species from beech and oak forest soils, *Eosentomon transitorum, Acerella remyi, Acerentomon gallicum, Acerentomon carpaticum* which contributed 57.2%, 31.2%, 25%, 14.3% and 10.7% respectively of the proturan fauna.

Records of British species were published by Bagnall (1912, 1934, 1936), Brown (1917) and Womersley (1924, 1927, 1928) but apart from Raw (1956) working in grassland, no studies have been made on their habitat distribution in relation to pH.

Materials and methods

Random soil cores, measuring 5.2cm diameter and 13.5cm long were taken from mixed woodland (OD grid ref. 55612-91) after the surface litter layer was removed at monthly intervals during 1983-86 and 1993. The predominant vegetation consisted of beech (*Fagus sylvaticus*), oak (*Quercus robur*) and rhododendron (*Rhododendron ponticum*). Franz, Haybach and Nosek (1969) showed that the majority of proturans occur in the top 10cm of the soil, so the cores were considered adequate. To extract the fauna the cores were placed in a Berlese/Tulgren funnel for eight days and specimens collected in tubes containing 70% alcohol. Soil moisture and pH were

recorded for each sample. After extraction, any proturans present were removed, separated into their developmental stages (Larva I and II, maturus junior, praeimago and adult), and cleared in Essig's aphid solution (Nosek, 1973) to facilitate species identification. They were identified using the key produced by Nosek (1973).

Results and discussion

Several species of proturan were identified, *Eosentomon* sp., *Acerentulus confinis* Berl., *Acerentomon nemorale* Wom., and *Acerentomon affine* Bagnall in the proportions of 1.6%, 17.5%, 61.7% and 19.5% respectively. The characters used in identification were: the structure of abdominal appendages I, II and III; the chaetotaxy of terga VII and sterna VIII; and the size, shape and arrangement of the sensillae on the fore tarsi. Discussing patterns of European Proturan distribution, Nosek, (1975) suggested that some species have a wide range with a wide variety of morphological characteristics, are abundant in samples taken from dispersed areas and may be regarded as ecologically tolerant species. Examples quoted were *Eosentomon transitorium* Berl., *Eosentomon germanicum* Prell., and *Proturentomon minimum* Berl. Others are morphologically well characterised and homogeneous, and are restricted to luxuriant vegetation. These can thus be considered ecologically intolerant species. Examples of this group are *Acerentulus gerezianus* Da Cunha., *Acerentomon brevisetosum* Colé and *Acerentomon aceris* Rus. Raw (1956) recorded mostly *Eosentomon armatum* Condé and a few *P. minimum* from grassland soils at Rothamsted, (Herts) which presumably belong to the ecologically tolerant species.

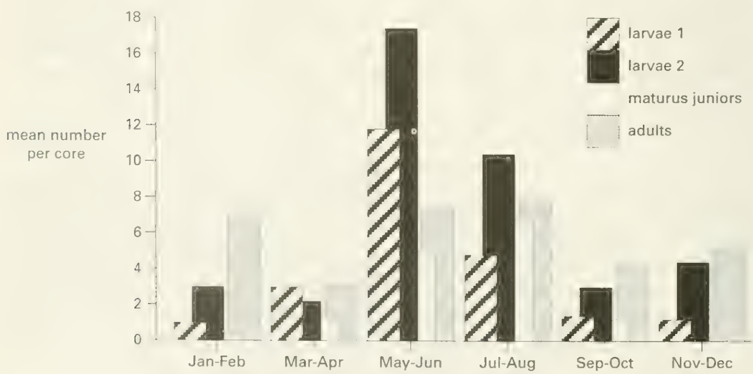
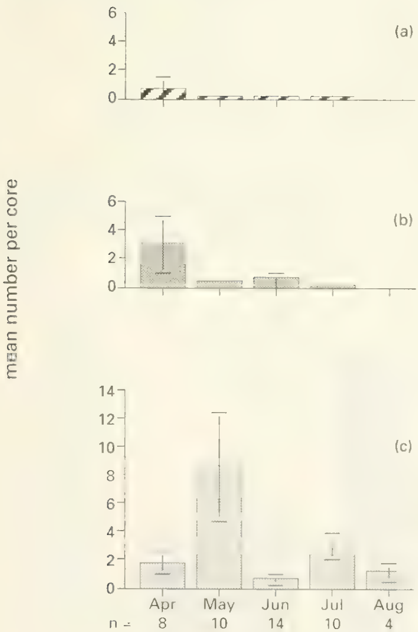


Fig. 1. Seasonal occurrence of the developmental stages of all recorded proturans in the present study. Mean data derived from monthly collections during 1983-86 and 1993.

In the present study in woodland, although different from those quoted by Nosek (1975), the species recorded belong to the genus *Acerentomon* and may be less tolerant than some other species and need soil with a higher moisture content (Nosek, 1975). Proturan development is ametabolous and anamorphosis occurs. Nosek (1973) divided proturan development into five stages, the praelarva followed by the first and second larvae, the maturus junior, the praeimago and the adult. Since identification of the immature stages in all species is not possible the records of all species were pooled (Fig. 1). Some individuals of all stages were present throughout the year but



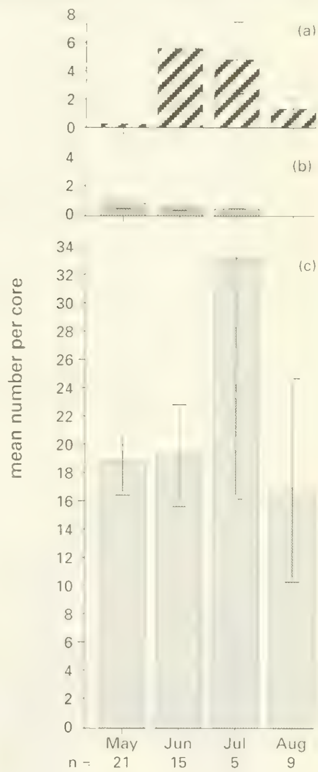
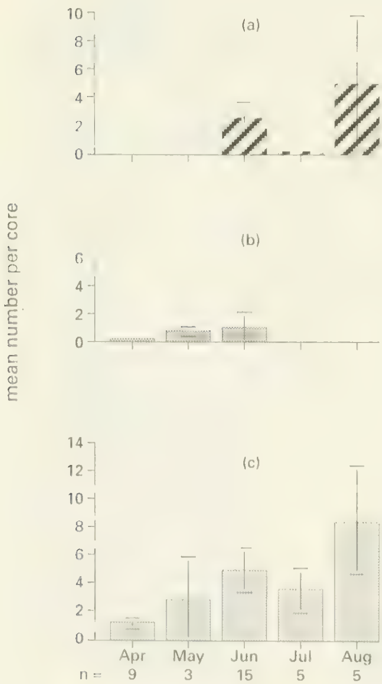


Fig. 2. (left) Adult proturans (±S.E.) from *Quercus robur* soil litter cores during peak breeding months. (a) *Acerentomon affine*; (b) *Acerentulus confinis*; (c) *Acerentomon nemorale*.

Fig. 3. (right) Adult proturans (±S.E.) from *Fagus sylvaticus* soil litter cores during peak breeding months. (a) *Acerentomon affine*; (b) *Acerentulus confinis*; (c) *Acerentomon nemorale*.

there was a peak of larvae one and two between May and August suggesting that at least some species are summer breeders (Tuxen, 1949). This may mean that either some species conform to the pattern exhibited by deeper living species by breeding throughout the year (Tuxen, 1949), or that winter conditions on the present study were milder than those in Denmark where Tuxen's (1949) study was made and species living near the surface were able to breed throughout the year.

The numbers of adults of *Acerentomon affine*, *A. nemorale* and *Acerentulus confinis* occurring under *Q. robur* (Fig. 2), *F. sylvaticus* (Fig. 3) and *R. ponticum* (Fig. 4) were recorded during the peak abundance between



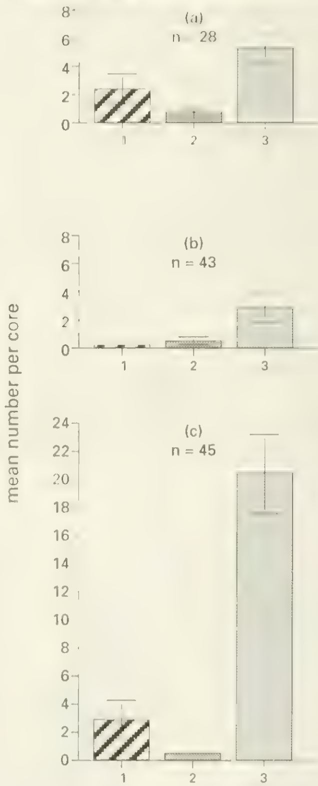


Fig. 4. (left) Adult proturans (±S.E.) from *Rhododendron ponticum* soil litter cores during peak breeding months. (a) *Acerentomon affine*; (b) *Acerentulus confinis*; (c) *Acerentomon nemorale*.

Fig. 5. (right) Adult proturans (±S.E.) from different soil litter cores. (a) *Rhododendron ponticum*; (b) *Quercus robur*; (c) *Fagus sylvaticus*.
1 = *Acerentomon affine*; 2 = *Acerentulus confinis*; 3 = *Acerentomon nemorale*.

May and August. *F. sylvaticus* litter contained the largest number of specimens (Fig. 5) with *A. nemorale*, *A. affine* and *Acerentulus confinis* (80.6%, 16.2% and 3.26%) followed by *R. ponticum*, (53.9%, 30.9% and 14%) and *Q. robur* (50.8%, 11.6% and 33.9%). Occasional specimens of *Eosentomon* were recorded under *Q. robur* (3.7%) and *R. ponticum* (1.12%) but not under *F. sylvaticus*.

The most important factors determining which organisms live in leaf litter are the nature of the soil and the species of tree above it. Many forest soils provide good organic profiles. Two types have been distinguished, "mull" and "mor" (Wallwork, 1970). Mull humus is neutral or slightly alkaline. Mixing occurs so there is no real build-up of organic material on the surface. Conditions favour the growth of nitrifying bacteria. Mor humus is characteristically rather acid and supports fungal growth with organic material accumulating on the surface and because of its greater thickness less susceptible to desiccation (Wallwork, 1970). *F. sylvaticus* favours chalky soil and produces a rather acid humus which is moist and well rotted. *Q. robur* produces a less acid environment. The soil in the present habitat was a "mor" so that food and moisture would favour proturans particularly those with a limited tolerance to adverse conditions. The soil samples taken during the present study had pHs ranging between 4.5 – 7.4 but the majority fell between 5.0 and 6.4 with a moisture content of 80%. Considering a minimum number of five samples (Fig. 6) shows that most samples at pH 5.5 – 5.9 contained proturans and only a slightly lower proportion at pH 6.00 – 6.4. This suggests that proturans can live in slightly acid conditions and may even prefer them. Further work is needed to verify this point.

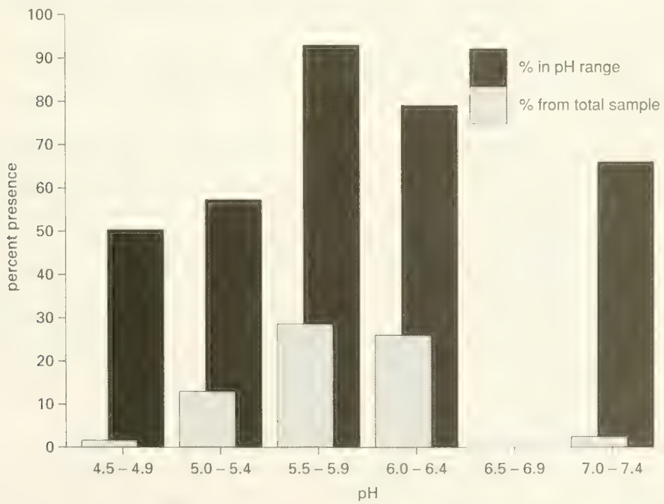


Fig. 6. Percentage presence of proturans in soil cores of different pH ranges.

Acknowledgement

The authors are grateful to Alison Smith who collected the original samples.

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PONTIA DAPLIDICE L. (LEP.: PIERIDAE) – A SERIOUS PEST OF CRUCIFEROUS CROPS AT HIGH ALTITUDE IN INDIA

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LEH-LADAKH is situated in the Northwest Himalaya where the temperature ranges from -30°C (winter) to 25°C (summer). Due to inclement weather, a mono-cropping system of agriculture is practiced by farmers in this region. Among cultivated vegetables, cruciferous crops such as cabbage, cauliflower, mustard, knol-khol, turnip and radish dominate up to 3962 metres altitude. During the survey of insect pests of vegetables in 1992, the caterpillars of a cabbage butterfly, *Pontia daplidice* Linn. were observed severely infesting cruciferous vegetables from mid-June to mid-August. The percentage of infested plant population was recorded in the field condition (Table 1).

Crops	Percentage infestation
Mustard (*Brassica compestris* var. *mustard* L.)	68.50%
Cabbage (*Brassica capitata* L.)	52.00
Cauliflower (*Brassica botrytis* L.)	56.00
Turnip (*Brassica rapa* L.)	34.00
Knol-khol (*Brassica oleracea* var. *gongylodes*)	40.00
Radish (*Raphanus sativus* L.)	18.00

Table 1. Infestation percentage of different crops.

Highest infestation was recorded in mustard (68.50%). The larvae collected from the field crops were fed host plants and reared to the adult stage under laboratory conditions. Arif *et al.* (1991) reported the damage potential of *P. deota* de *niceville* on cruciferous crops in Leh-Ladakh and cauliflower was observed to be heavily infested. Mani (1986) has reported the occurrence of 60% of butterfly species (*Papilio machaon*, *Baltia* spp., and *Apporia* spp.) at up to 3000 metres, of the remaining hypsodiont forms 50% occur up to elevation of about 4200 metres and 5% species are found above 5500 metres altitude. The Pierids *Baltica bulteri* (Moore) and *Pontia daplidice* Linn. have been reported at 5485 and 2800 metres altitude respectively in northwest and western Himalaya. The occurrence of *Pontia daplidice* Linn. of the present observation seems to be the first report as a serious pest at 3352 to 3962 metres altitude in India.

Acknowledgements

The authors are thankful to Dr J.D. Holloway and Director I.I.E., CAB International, London for the identification of insects.

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Notes on *Uresiphita polygonalis* (Denis & Schiffermüller, 1775) (Lep.: Pyralidae) in Huelva, Spain

According to Goater (1986) this species, a rare immigrant to the UK, feeds on *Genista* and *Sarothamnus*. I have found the larvae to be common on *Retama monosperma* which grows in the coastal regions of this south-westerly Spanish province.

The larvae feed gregariously in groups of about a dozen in thinly-spun silken webs. I collected one batch in late March 1991 in Isla Canela, near to the Spanish border town of Ayamonte. A second batch was seen in Ayamonte itself the following day; my notes say that it was "very common". Subsequent larvae turned up in El Portíl further east along the "onubense" coast.

Larvae were taken back to London in May 1991 and reared without incident in plastic boxes. A male emerged on 25th May with a female two days later on the 27th. The weather in May of that year was generally very poor but this did not deter the moths from pairing. According to my personal notes a pair were seen to be "in cop" at 2330 hours when the outside temperature was a mere 10°C. No special arrangements were made to achieve a pairing; a plain net cage was suspended out of doors. Subsequent female imagines emerged on 29th and 30th May but no further pairings were secured. The fertilised female began to oviposit the last day of May. Larvae began to hatch six days later and were offered various woody leguminous plants. As I was in the process of moving house the larvae were neglected and failed to survive.

As regards this moth's appearance in Britain, it is said by Goater (1986) to be "A very scarce immigrant in the southern seaboard counties in late summer and autumn".

It is distributed from central and southern Europe through to the tropics and Australia. I would imagine that given where I found this species in Spain; (in the extreme south) and that when the larvae were found; (in March) this moth is quite likely to be continuously brooded in that country. **Reference:** Goater, B., 1986. *British Pyralid Moths*. Harley.

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ON THE IDENTIFICATION OF *CERCYON ALPINUS* VOGT (COL: HYDROPHILIDAE) AND ON ITS OCCURRENCE IN SCOTLAND

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C. ALPINUS, a species recently added to the British list, is a small, dark, terrestrial *Cercyon* with blackish labial palps. It is similar in these and in many other respects to *C. haemorrhoidalis* (Fabricius) to which it runs down in the key given by Joy (1932). Examination of about 30 Scottish examples of *alpinus* and about the same number of examples of *haemorrhoidalis* from various parts of Britain has demonstrated only three consistent external differences.

1. The base of the pronotum opposite the middle of the scutellum has a very fine, short, longitudinal impression in *alpinus* but not in *haemorrhoidalis*.
2. The epipleura are blackish in *alpinus* but dull orange in *haemorroidalis*.
3. The spindle-shaped raised portion of the mesosternum is significantly narrower in *alpinus* than in *haemorrhoidalis* – length/max. width ratio 4.0 or more in *alpinus* and less than 4.0 in *haemorrhoidalis*.

The first two of these differences were noted by Vogt (1968) but he considered the shape of the mesosternum to be the same in the two species, which conceivably may reflect a racial difference.

Apart from the external differences, in males, a clear distinction between the species is provided by the shape of the central lobe of the aedeagus, which tapers uniformly to a narrow point in *alpinus* (fig. 1) but which is broad and apically constricted in *haemorrhoidalis*.

Other differences fail to provide a sure distinction in all cases. On average, *alpinus* (length 2.5 – 2.9mm) is shorter than *haemorrhoidalis* (2.5 - 3.1mm) but there is considerable overlap in length. In *alpinus*, the elytra are black at the base, gradually becoming deep red towards the apex. Most examples of *haemorrhoidalis* have similarly coloured elytra but, in some, the elytra are reddish throughout. Vogt (1969, 1971) implies that a tooth at the sutural angle of the elytra in *haemorrhoidalis* but not in *alpinus* serves to separate the species. Fowler (1886), however, states that in *haemorrhoidalis* (= *flavipes* F.) this tooth is not constant and certainly it was not obvious in most of the British examples of this species examined by the author. The antennal club is darker in *haemorrhoidalis* than in *alpinus* but this is very much a comparative difference. In about one third of the examples of *alpinus*, the raised portion of the mesosternum has a narrow, central longitudinal ridge which is not present in *haemorrhoidalis*.

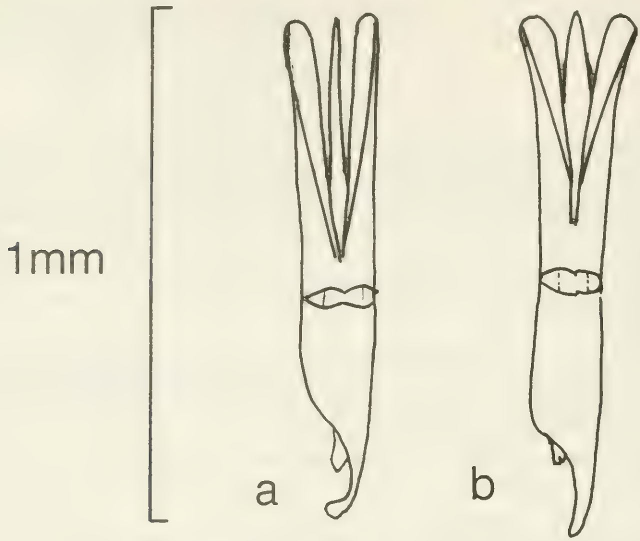

Fig.1. Aedeagus of (a) *C. alpinus* Vogt (b) *C. haemorrhoidalis* (Fabricius).

Occurrence

C. alpinus was discovered in Britain by Owen & Mendel (1990) who found two specimens in dung of red deer in the Forest of Mar, at the Linn of Dee near Braemar. Following this, additional examples turned up at the original site and in the RSPB Abernethy Estate, mostly as singletons. In May 1994, however, the beetle was found to be quite plentiful at the original site and at Braemar which is about 10km distant. Except for two examples caught in pitfall traps set in pine woods, all the Scottish specimens known to the author were obtained from the dung of red deer, particularly from fresh dung. Detailed records, with collectors initials (see acknowledgements), are as follows:-

> Forest of Mar, near the Linn of Dee NF09, open pine forest 22.8.90 J.A.O. & H.M. 2 exx.; 25.9.91 J.A.O. & M.S. 2 exx.; 22.6.92 M.S. 1 ex.; 25.9.94 J.A.O. 10 ex.; Braemar NF19, open birch wood 30.5.94 J.A.O., 21exx.; RSPB Abernethy Estate NJ01, pine wood with blaeberry carpet (pitfall traps) 6.92, R.P., 2 exx., open pine forest, 5.94 D.L. & S.T., 1 ex. (Abernethy specimens det. J.A.O.)

Examples of *C. atomarius* (Fabricius), *C. haemorrhoidalis* and *C. melanocephalus* (Linnaeus), together with a number of *Aphodius* species, occurred in the dung along with *alpinus* at the Forest of Mar and Braemar sites. Thus, one collection of fresh dung from Braemar (30.5.94), amounting to about 10 litres, held *alpinus* 21 exx., *atomarius* 1 ex., *haemorrhoidalis* 1

ex. and *melanocephalus* 8 exx. A similar amount of dung from the Forest of Mar (29.5.94) yielded *alpinus* 10 ex., atomarius 4 exx. and *melanocephalus* 10 exx. Considering the small amount of deer dung sampled compared with the vast amounts lying at that time at the Linn of Dee, at Braemar and at intervening points, the total population of *C. alpinus* in this area alone must have numbered thousands.

Outside Scotland, *C. alpinus* is apparently only known from alpine regions in southern Germany and Austria (Vogt, 1968; Lucht, 1987). The reason for this curiously discontinuous distribution remains to be determined. The availability of sufficient, suitable dung at the correct time of year could be relevant. The author has only sought the beetle in red deer dung. The type specimen, however, came from cow dung (Vogt, 1968).

Acknowledgements

I am grateful to David Lambie, Howard Mendel, Robert Proctor, Magnus Sinclair and Stewart Taylor for help in collecting material and/or for allowing me to quote their records. Mr P.M. Hammond kindly confirmed the identification of the first two specimens.

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Aspilates gilvaria (Denis & Schiffermüller, 1775) (Lep.: Geometridae) and variation in the imago's flight period.

In the springs of both 1990 and 1991 I was intrigued to find *Aspilates gilvaria* on the wing in both central Spain (1990) and in south-west Spain (1991). Such appearances were at variance with the established literature on the moth. Although Herbulot (1963) mentions May for the imago, three other authors – Culot (1919-20), Skou (1986) and Skinner (1984) – all cite late summer as the normal flight period.

Claude Herbulot provides the most detail, as in addition to the May flight period, he also mentions August which presumably relates to a second brood.

My experience of this insect in Spain would certainly point to it being bivoltine. Now, this might be expected for the extreme southerly Spanish province of Huelva where the imago was first noted by myself on 18th March at light with imagines being seen until 27th April. However, how does one account for the central Spanish records from 1990 where examples were noted on 21st April (Valdemoro, 500m) and 28th April (Las Navas del Marqués,

1318m)? One would assume that at such high altitudes the moth would follow central European patterns. Culot, Skinner and Skou all give July/August. This is especially surprising as Skinner gives almost exactly the same flight periods which relate to south-east England as Skou details for Finland, where the moth is rare and does not occur elsewhere in Scandinavia; this by my calculations must be a distance of some 800km!

Of the stock I collected in March/April 1991 from Huelva, larvae hatched out on 2nd May and fed very slowly on thyme. I have a single note referring to a larva spinning a flimsy cocoon on 26th October that same year, but the moth failed to survive to eclosion.

Certainly all the works I dealt with give the larval stage as the quiescent stage with Herbulot mentioning the larvae emerging again in April after the winter.

Obviously, the best manner of solving this discrepancy would be to successfully rear *gilvaria* from southern Spanish stock collected in March/April and noting subsequent emergences.

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Notes on *Glyphipteryx thrasonella* (Scopoli) (Lep.: Glyphipterigidae)

The chief problem with understanding the ecology of moths is that most of them are nocturnal and I have yet to find a way of observing moths at night without using lights which disturb their behaviour. Day-flying moths such as *Glyphipteryx thrasonella* are easier to observe. I spent a couple of hours on 20th May 1993 observing a small colony on a wet meadow at Redlake Nature Reserve in east Cornwall. Attempts at marking them with small dots of nail varnish (to see how long marked individuals lived in the wild) failed because the wings were too small and too shiny.

I had already mapped the vegetation of this wet meadow, finding two mire communities, M23 (*Juncus – Galium palustre* rush pasture, sub-community *Juncus effusus* with *Juncus effusus* replaced with *Juncus articulatus*) and M25 (*Molinia – Potentilla erecta* mire, sub-community *Angelica sylvestris*). M25 is widespread throughout Cornwall and I have often found *Glyphipteryx thrasonella* where M25 occurs. In this wet meadow, *Glyphipteryx thrasonella* appeared to be confined to these mire communities with a definite association with rushes rather than Purple Moor-grass. Of 38 moths recorded, 28 were observed resting on *Juncus effusus,* six on *Juncus articulatus,* two on *Cirsium palustre* and one each on *Juncus conglomeratus* and *Anthoxanthum odoratum.*

The moths sit sideways on the stems of rushes, often raising and lowering their wings without flying. Like squirrels, they often move away from anyone watching them, keeping the rush stem between them and any possible predator. They drop to the ground if disturbed. When flying from one stem to another,

they generally land a few inches below the tip and then climb near to the top. In the late evening when I was watching them, they were sunbathing in the weak sunlight with wings at right angles to the sun to get maximum warmth. As soon as the sun disappeared behind the trees (about 8 pm), they stopped flying and settled near the tips of the rush stems.

I counted 33 separate individuals in an area roughly 80 square metres. I estimate the total population to be about 150 in the field, much less than I would have expected. There were few nectar sources available with only *Carex binervis* and *Carex flacca* flowering. One moth taken home survived for five days with only a light spray of water. Out of 38 moths recorded in total, five had well marked forewings, 14 had reduced markings and 19 had no visible markings (f. *cladiella*).– ADRIAN SPALDING, Tregarne, Cusgarne, Truro, Cornwall TR4 8RL.

Operation Stag Beetle

As a temporary worker for the county wildlife trust, I receive many telephone calls asking for advice and help on almost every natural history subject from birds to badgers and amphibians to insects.

One such call on 8th February 1994 was from a concerned gentleman in Shoreham, West Sussex. He was working at a convent(!) and had found a large colony of "stag beetles", and wanted to know what to do with them. Evidently, someone had noticed that a statue in the grounds, which was mounted on an old elm stump, was leaning at an alarming angle. On investigation, the stump was found to be infested with beetle larvae.

As the stump was scheduled to be strengthened with concrete, it was clear that action was needed, and the trust agreed to try and rescue the larvae. Easy to say, but more of a problem in practice, particularly at that stage when we did not know the true identity of the beetles. The telephone description could have been either *Lucanus cervus*, or the Lesser stag beetle, *Dorcus parallelipipedus*. When we arrived on site – a cold, wet morning, we were pleasantly surprised. A very large stump showing signs of massive infestation. Around 50 larvae had been found, at all stages of development – with a number almost fully grown at a magnificent 75mm+ in length. Undoubtedly the true stag beetle. Two adult males were found, although they were moribund on this cold day.

There was no real alternative to digging up the entire stump, loading it in the van, and transporting it to the reserve, where the collection of larvae excited much interest. Perhaps these are now the most photographed set of Stag beetles anywhere?

After locating a suitable spot, the entire stump with resident larvae, were half-buried in the ground. We hope our efforts were not in vain, and the colony manages to survive in its new home.– D. DAY, 26 Manor Avenue, Hassocks, West Sussex BN6 8NG.

Notes on Lepidoptera in Shetland in 1993

Recent records of Lepidoptera for Shetland have been published by Riddiford and Harvey (1992, *Ent. Rec. J. Var.* **104**: 263-264) and Pennington (1993, *Ent. Rec. J. Var.* **105**: 173-174). This note adds further records for Shetland in 1993, excluding Fair Isle records which are to be published separately.

No less than nine species were added to the Shetland list in 1993. Five species of microlepidoptera included the Gelechiid *Scrobipalpa acuminatella* (Sircom), identified by the late Ian Lorimer from four specimens collected by Mike Pennington at Baltasound, Unst between 27th June and 24th July. Three species of the Tortrid genus *Acleris* were found: *A. emargana* (Fabricius) was bred by Terry Rogers from larvae found on Willow (*Salix*) at Eswick, Mainland (an imago was also found on sugar there on 23rd September); and Keith Bland identified single specimens of *A. hyemana* (Haworth) collected by Neil Marks from Muckle Roe in April and *A. hastiana* (Linnaeus) collected by Terry Rogers at Eswick in September. Another tortrid, the Larch Tortrix *Zeiraphera diniana* (Gueneé) was identified by Keith Bland from specimens collected flying around Lodgepole Pines *Pinus contorta* at Baltasound on 6th-9th September. All the microlepidoptera listed have had specimen genitalia preparations by Keith Bland placed in the National Museums of Scotland.

Four species of macrolepidoptera included the Common Heath *Ematurga atomaria* (Linnaeus) which was found by Terry Rogers to be common in heathery areas of Central Mainland with records in bright sunshine at Sandwater, East Hill of Voe and Catfirth between 8th May and 14th June (specimens retained by Terry Rogers) and in South Mainland at Dalsetter on 27th May (C. Donald). The Lesser Broad-bordered Yellow Underwing *Noctua janthe* (Dennis and Schiffermüller) was attracted to Roger Tallack's light trap at Lerwick on 25th-27th August, with one specimen retained by the collector. At Eswick Terry Rogers collected a specimen of the Brindled Green *Dryobotodes eremita* (Fabricius) from the side of a shed on 12th September (determined by the late Ian Lorimer but specimen damaged in transit) and a Pink-barred Sallow *Xanthia togata* (Esper) at Buddleia on 13th September (confirmed by the late Ian Lorimer and specimen retained by Terry Rogers).

Of these nine new species recorded most are likely to be resident, especially as there were very few migrants recorded during the year. However, the *X. togata* at Eswick may have wandered from elsewhere as, although many specimens of the larval foodplant *Salix* grow at Eswick, few produce viable catkins. The record of *D. eremita* is even more perplexing as there are only two tiny Oaks (*Quercus* Sp.) at the site and no recent importations.

Further interesting records included four species recorded north of Fair Isle for the first time. Keith Bland determined records of a specimen of *Coleophora* sp. from the Baltasound MV trap on 15th July, which could not

be identified to species as it was damaged in transit, and a Cacao Moth *Ephestia elutella* (Hübner) found indoors on 10th July. The Heart and Dart *Agrotis exclamationis* (Linnaeus) was recorded by Jon and Ad Clifton at Toab, South Mainland on 15th June and 17th July, and by Terry Rogers at Eswick on 25th June. The Red-green Carpet *Chloroclysta siterata* (Hufnagel) was positively identified at Baltasound on 12th September (determined by Bernard Skinner) and Eswick on 15th September (determined by the late Ian Lorimer). In addition a record of Autumn Green Carpet *C. miata* (Linnaeus) collected from a lighted window on Foula by Frances Ratter on 6th September and determined by Bernard Skinner must be regarded as the first confirmed record for the islands given the past (and current!) difficulties in separating the last two species.

One of Shetland's great specialities, the Exile *Apamea zeta marmorata* (Zetterstedt) was recorded from a new locality with 29 at either light or sugar at Eswick, the most southerly locality recorded so far. Further records of the Brick *Agrochola circellaris* (Hufnagel) at Eswick and Lerwick and the Large Wainscot *Rhizedra lutosa* (Hübner) at Eswick following on from those in 1992 suggest that these species may be at least temporarily resident in the islands. A single specimen of the Pyralid *Scoparia subfusca* (Haworth) in the Baltasound MV trap on 17th July was determined by Keith Bland. This species was not included in previous Shetland lists although reference is made to Shetland specimens by Goater (1986 *British Pyralid Moths*, Harley). Finally, the Tortrid *Eupoecilia angustana* (Hübner) was found to be common on Unst in June, flying mainly in the afternoon between 2 and 6pm. Interestingly, five specimens sent to the late Ian Lorimer for determination included a specimen resembling the nominate form. Previously only the Shetland race *thuleana* had been recorded from the islands although field observations suggest a gradation between the two forms.

While the assistance of Keith Bland, the late Ian Lorimer and Bernard Skinner has been noted in the text of this note we would like to further acknowledge their assistance and encouragement. Thanks are also due to Nick Riddiford for keeping us informed of Fair Isle records and members of the Shetland Entomological Group for their records. Details of the Shetland Entomological Group can be obtained from the following address.–

M.G. Pennington and T. Rogers, 9 Daisy Park, Baltasound, Unst, Shetland ZE2 9EA.

Meligethes rotundicollis Bris. (Col.: Nitidulidae) locally outnumbering *M. aeneus* (F.)

M. rotundicollis is one of our less common *Meligethes:* Joy (1932, *Pract. Handb. Brit. Beetles* **5**: 537) notes it as rare, while Fowler (1989, *Col. Brit. Isl.* **3**: 253) lists a mere half-dozen localities in south-east England. My late friend Dr A.M. Easton told me that it occurred sparingly in the flowers of various Cruciferae, and that its presence was often masked by the great numbers of *M. aeneus* breeding on the same plants. Up to this June I had collected only two specimens, both by general sweeping, in the 1940s

(Oxford district, and Box Hill, Surrey); occasional and more purposeful searches had yielded no more.

Recently at Kidbrooke near here, I rather casually tapped a flowering stem or two of charlock (*Sinapis arvensis*) over an open hand and tubed three smallish *Meligethes*, which to my satisfaction proved, as expected, to be the long-sought *M. rotundicollis*. A return visit to the spot (17.vi.94) resulted in hordes of the ubiquitous *M. aeneus* at the original place; but in contrast, an isolated plant of charlock in a hedge bordering a field barely 20 yards away produced the rarer species in some plenty, with only a sprinkling of the common one – the former easily recognised by their smaller size, shorter form, and duller aspect. This seems a remarkable reversal of the usual state of affairs, which I believe is seldom observed.– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Agathomyia falleni (Zett.) (Dipt.: Platypezidae): a further West Kent record

The note on this rare or little-known fly by Laurence Clemons (*antea* 117) prompts me to put on record another occurrence in West Kent, this time in the north-west corner of the vice-county (S.E. London). My first acquaintance with the species was on 14.x.80 when two females were found on a dead elm stump here at Charlton, in Maryon-Wilson Park, situated at the very edge of a rhododendron thicket. On the 24th there were four more. The following autumn, *A. falleni* females were again present: a few on 5.x., one hovering and flying slowly amongst the rhododendron foliage above the stump, but on the 21st they were replaced by a single female *A. unicolor* Oldb. The next autumn I could not find even the stump(!), which I concluded must have been removed.

Mr Clemons' data suggest that previous records (in Kent at all events) relate mostly to males, so it is noteworthy that not a single male was encountered in the Charlton occurrence – unless a smaller and darker-looking Platypezid on the foliage near the stump, which escaped capture, was a male *A. falleni*. That is indeed possible; males may have been on the wing rather high up, though none could be seen. The stump had few fungi on it but I noticed two kinds, one of them presumably *Bjerkandera adusta*, the pabulum of this *Agathomyia*.– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Agelastica alni (L.) (Col.: Chrysomelidae) in the New Forest, 1941

While spending some days with my friend the late Philip Harwood in 1953, I learnt that he had seen several specimens of the very rare *Agelastica alni* taken by a Dr Basker (of Bournemouth) at Matley Bog in the New Forest, on its foodplant, alder, about a decade earlier. Needless to say, he had himself made repeated but vain attempts to find the beetle there. His failure to do so is not surprising, for its reflects the pattern typical of British occurrences of the species: in no case known to me has it been found to persist in the

original site for any appreciable time after its discovery (eg. for a year or two), even though it may have been in some plenty when found – as for example at Marazion Marshes, south-west Cornwall, in 1901. This fact fits the theory that *A. alni*, though common in those parts of Europe nearest to us, is highly adapted to a continental climate and thus unable to maintain itself here for any length of time – perhaps not, or seldom, for more than a generation or two when conditions are suitable.

Dr Chris O'Toole has kindly informed me that there are in the Hope Department, Oxford, two specimens of *A. alni* from the Harwood collection labelled "New Forest/vii.1941/Dr C.A. Basker/Bournemouth", which fixes the year of capture. The remaining specimens (assuming there were any) were probably retained by the captor or placed in the Bournemouth Entomological Society collection. Actually this is not the sole occurrence of *Agelastica* in the county, since my specimen (purchased many years ago at Janson's) bears the not over-informative data "Alders, Hants."– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Extension of range of *Chloroclysta siterata* Hufn. (Lep.: Geometridae) in S.E. England

Two interesting references to this species have been made recently. D. Young (*Ent. Rec.* **105**: 250) states that is has spread northwards from Hampshire into Berkshire recently, and P. Baker recorded it from Virginia Water in north-west Surrey in October 1993, commenting that this was in accord with an extension of range *C. siterata* was undergoing in Surrey. (*Brit. J. ent. & nat, Hist.* **7**. pt. 1.)

On 14th May 1994 a specimen attended my garden m.v. trap, and would appear to confirm the continued advance north-eastwards. Chalmers-Hunt (*Butterflies and Moths of Kent*, 1981) quotes the last record for the species in north-west Kent as Greenhithe, 1904, although L.W. Newman stated that it was present in the Bexley area in the first decade of the century (Woolwich Survey, 1909).– B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

***Herminia nemoralis* Fab. (Lep.: Hypeninae) a second generation?**

The time of appearance of this moth covers June to August; most textbooks are in agreement, and C. Plant (*Moths of the London Area*, 1993) states the period precisely as the first week of June to the third week of August.

On 17.ix.1992 a fresh specimen appeared at my garden m.v. trap, the last of ten commencing with a specimen on 31st May; the penultimate one was recorded on 23rd July in a year noted for its early spring. If this September moth is a representative of a second generation, this must be an unusual occurrence. However, *H. tarsipennalis* Treits., which here occurs along with *nemoralis*, and whose larva feeds over the same period, not infrequently produces September specimens which are regarded as representing a second generation (Skinner, *Moths of the British Isles*, 1984), and confirmed by Plant (*ibid*).– B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Clambus gibbulus (LeConte) (Col.: Clambidae): two more West Kent records

C. Johnson (1992, A bionomic review of the British Clambidae, *Ent. Gaz.* **43**: 67-71) gives a single West Kent record of this species (previously known as *C. radula* Endrödy-Younga), namely Westerham (P. Harwood). He notes it (p.68) as sporadic and rare, mostly occurring singly in a variety of habitats and very scattered in southern England to S. Yorks and S. Lancs. It is closest to the rather common *C. punctulum* Beck (*punctulus* auctt., see below), from which it is most readily separable by the head character figured by Johnson (1966, Coleoptera: Clambidae, *Handbk Ident. Br. Insects*, **4**(6a): 10), and with which it is probably often confused.

I find that I have a specimen of *gibbulus* taken at mercury-vapour light here at Charlton (15.viii.81), and another from my former garden at Blackheath (14.iv.46) in cut grass. The latter probably occurred in company with *C. punctulum*, which I have long known from my garden and is found throughout the district.

Regarding the last named species: unless Beck in 1817 actually wrote *punctulus* – which is most unlikely – the name should be *punctulum* as always in Continental works, and should not have been changed. There is no latin word *punctulus*; the neuter noun *punctulum* (a diminutive from *punctum* "a point") being clearly intended, and, as a noun-epithet, it is invariant.– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

The Large White, *Pieris brassicae* L. (Lep.: Pieridae) apparently univoltine in Banffshire

While the Large White is generally considered to be at least bivoltine in Britain, the possibility of there being only one brood in parts of Scotland is mentioned by Heath, Pollard and Thomas (1984), quoting Graham-Smith and Graham-Smith (1929).

My own observations in Banffshire since 1990, mainly around Ordiquhill at about 170 metres above sea level, confirm that *P. brassicae* is basically univoltine here. General observations, and standardised counts under the national Butterfly Census Scheme, both reveal a single, rather protracted flight period. In 1991, this did not begin until mid-July, and lasted into September. During the unusually warm summer of 1992, Large Whites were seen from 10th June and throughout July, but with few in August. In 1993, a cool year, the main flight period was again delayed until after mid-July.

Further evidence for a single brood came from observations of overwintering pupae in the wild during 1991-1993. None of about 30 being watched was seen to have hatched before the first imagines were noticed on the wing. Likewise, egg batches or larvae did not appear on garden nasturtiums and brassicas until after the observed flight period had begun, so the possibility of a small but unnoticed earlier brood in each of the years

seems remote. Dr M.R. Young (pers. comm.) states that in Aberdeenshire he also sees only one brood of larvae a year.

It was only after making the foregoing observations that I was able to obtain the Graham-Smith and Graham-Smith (1929) reference, and discover that my independent findings merely duplicated their earlier ones. They too noted that only one brood of larvae is seen annually in Aberdeenshire. They also found that overwintering pupae emerged late, some not until July, even though theirs had been transported as far south as Cambridgeshire. Their Aberdeenshire stock continued to be univoltine, at least for another year, when reared in Cambridge.

In some years, the situation is complicated by migration. Thus, in 1990, occasional Large Whites were seen in Banff from 4th May onwards. Thomson (1980) states that such early individuals are migrants, and describes the usual peak flight period from mid-July until early August (exactly as observed at Ordiquhill) but without suggesting that residents might be univoltine. Migratory species such as this are sometimes thought incapable of producing locally-adapted forms because of the degree of mixing. However, with the short cool summers this far north, it is possible that any double-brooded immigrants fail to fit in two generations and almost immediately die out.

Of the other *Pieris* species, the Small White, *P. rapae* is a scarcer immigrant than the Red Admiral, *Vanessa atalanta*, and was not seen at all at Ordiquhill in 1991 or 1993, and as just three singles in 1992. The Green-veined White, *P. napi*, is the most abundant butterfly species in the area and is clearly partly bivoltine, with the first brood usually out from early May and a smaller second brood from late July through August. It may be constrained from producing a fuller second brood because little of its main foodplant here, *Cardamine pratensis*, is available by August to support larvae resulting from that brood.

References Graham-Smith, G.S. and Graham-Smith, W., 1929. *Pieris brassicae*, L., with special reference to aberrations from Aberdeenshire. *Entomologist's Rec. J. Var.* **41**: 157-161; Heath, J., Pollard, E. and Thomas, J.A., 1984. *Atlas of Butterflies in Britain and Ireland*. Viking, Harmondsworth; Thomson, G., 1980. *The butterflies of Scotland*. Croom Helm, London.

– Roy Leverton, Whitewells, Ordiquhill, Cornhill, Banffshire AB45 2HS.

Notes on rearing *Acronicta leporina* L. (Lep.: Noctuidae) in Banffshire

The Miller, *Acronicta leporina*, is widespread in north-east Scotland, but mainly seen as occasional singles (Barbour 1976, Palmer 1974). A female taken at m.v. light at Ordiquhill, Banffshire on 6.vii.91 was kept for several days, and reluctantly laid about 26 eggs on alder before being released still gravid. Several eggs were deformed and infertile. Of the 18 larvae which hatched, three were lost in the first instar when they became cemented to the leaf surface by traces of aphid honeydew – an unforeseen cause of death

which perhaps sometimes happens in the wild. The remaining larvae were easily reared on silver birch.

The larva of this species provides a rare example of asymmetry. In all 15 of the last-instar larvae, the long, silky, yellowish hairs covering the left side of the body were angled forwards towards the head, while those on the right side were angled backwards towards the tail. This arrangement was the opposite of that described in Heath & Emmet (1983), and illustrated in Brooks (1991); it was confirmed by references to photographs taken of the brood at the time.

When ready to pupate, both the hairs and the body of the larvae changed colour to a brownish-grey. The larvae became very active, tunnelling in and out of the rolls of corrugated paper provided, before finally constructing small cocoons of chewed paper in a hollow excavated at the end of a burrow often several centimetres in length. One larva died without pupating. The remaining 14 pupae were left *in situ* in the corrugated rolls, and stored in an unheated outbuilding. Moths emerged as follows:

June 1992 – 1 June 1993 – 11 28th May 1994 – 2

Overwintering more than once by the pupa of this species is already known, but the high proportion of this brood which did so is of interest. Ironically, the early summer of 1992 was particularly fine and warm here, while that of 1993 was cooler than normal. Similar behaviour is common among pupae from Scottish populations of many other species, as pointed out by Tutt; he noted that it occurred even when Scottish stock was transported south to England. He also found that unusually warm conditions, far from stimulating emergence, seemed to increase the proportion which overwintered twice (Tutt, 1905). Perhaps this is what happened at Ordiquhill in 1992.

Whatever the benefits of such behaviour, these must be great enough to outweigh the costs: the extra 12 or 24 months during which the pupa is exposed to the risk of disease, predation or misadventure. However, it may be that if the pupation site is sufficiently well-chosen to enable the pupa to survive the first winter, the risk of subsequent mortality is low. Finally, there are implications for monitoring – annual counts of numbers seen may not accurately reflect the fortunes of the population where a sizeable but variable proportion of the pupae overwinters more than once.

The 14 moths bred showed continuous variation. Three had the ground colour of the forewings pure white, without any admixture of darker scales, so that the black markings showed up sharp and clear – the type form. The others ranged from almost white through to several which were as dark as the normal English form ab. *grisea* Cochrane.

References: Barbour, D.A., 1976. Macrolepidoptera of Banffshire. *Entomologist's Rec. J. Var.* **88**: 1-11; Brooks, M., 1991. *A Complete Guide to British Moths* Jonathan Cape, London; Heath, J. and Emmet, A.M. (eds.), 1983. *The Moths and Butterflies of Great Britain and Ireland* **10**. Harley Books, Colchester; Palmer, R.M., 1974. Lepidoptera of Aberdeenshire and Kincardineshire. *Entomologist's Rec. J. Var.* **86**: 273-284; Tutt, J.W., 1905. *Practical Hints for the Field Lepidopterist* vol III: 36-37. Elliot Stock, London.

Roy Leverton, Whitewells, Ordiquhill, Cornhill, Banffshire AB45 2HS.

***Estigmene nigricans* (More, 1872) (Lep.: Arctiidae) in Bombay, 1994**

A female of this Arctiid was found on the trunk of a frangipani tree (*Plumeria*) in Aarey Milk Colony, an area to the north of Bombay on 15th June 1994. That the south-westerly monsoon had just began, not five days earlier probably accounted for its appearance. The moth was put into a pill box and soon began to lay batches of ova. The moth remained in this receptacle until I returned to London two days later, by which time about eight batches had been laid.

The larvae began to eclose *en masse* between 20th and 22nd June. At this stage I did not know the identity of the moth and had to resort to guess work in terms of what the larvae might feed on. I need not have worried. The newly-hatched larvae were offered *Buddleja davidii*, *Menthe* and *Geranium* (Sweet Robert). All three foodplants were accepted especially the first two named. This perhaps was not so surprising given that *B. davidii* belongs to the family, *Loganiaceae*, widely distributed in Asia, whilst *Mentha* belongs to the labiates with worldwide distribution.

Initially the larvae fed in groups on the undersides of the leaves but after the first ecdysis fed singly. The first moult took place on 22nd June and most were in their second instar by 24th June. Feeding was rapid, and most larvae had entered the final instar after 14 days. The larvae are morphologically very variable. I noted two forms; one is "chestnut-red" with the dorsal "hairs" tipped in black, the other form is "black" throughout. The larvae are extremely mobile and move at great speed if disturbed. Although the larvae were initially "started off" in the airing cupboard, they have been kept at outside temperatures, which recently have been in the region of 25°C (early July).

Four examples of this species' larvae, fourth instar are now in the Natural Museum's collection where the moth was identified.

As regards the moth's natural history in India. The most useful book in this respect was the 1986 work by M.R.G.K. Nair. He does not deal specifically with *E. nigricans* but with a related species, *E. lactinea* (Cram.) which is a pest in India. It is cited as feeding on rice crops in Bihar and Madyha Pradesh (east & central India respectively). In south India it is a pest of ragi (a kind of millet). It is also noted on the leguminous plants, red-gram and horse-gram. Other plants include *Sesamum indicum* (sesame), cotton, jute, sweet potato, cashew and coffee.

More in his 1882-3 tome, mentions *E. irregularis*, although he puts it in the former genus, *Rajendra*.

Seitz (1933) lists 28 species in the genus *Estigmene* (Hübner) of which ten species are Indo-Australian.

References: Hampson, G.F., *The Fauna of British India*. Moths Vol. II. 1894; Heywood, V.H., *Flowering Plants of the World*. 1993; More, F., *The Lepidoptera of Ceylon*. Vol. III. 1882-3; Nair, M.R.G.K., *Insects & Mites of Crops in India*. 1986; Seitz, Dr A. *The Macrolepidoptera of the World* **10**. Indo-Australian Bombyces & Sphinges. 1933.

–G. Clumo, 2 Long Bridge Road, Lichfield, Staffordshire WS14 9EL.

Acritus homoeopathicus Wollaston (Col.: Histeridae) at Box Hill, Surrey

On 23rd April 1991, my friend Norman Heal and I visited the National Trust Box Hill Estate where we came across an old bonfire site. We each took some of the ashes home and were pleased to find in them numerous examples of *A. homeopathicus* – a species not previously recorded from the area. The site had been used for a bonfire only once, in January 1990, to burn branches of various deciduous trees.

Further small samples of ashes were collected on 12.5, 14.7, 27.10, 20.12.91 and on 11.4.92 and all were found to contain the beetle. By 1.9.92, however, the ashes had been almost completely obscured by growth of brambles and other herbage and no examples of *A. homeopathicus* could be found in a large sample of ash nor in other samples obtained over the next few months. On the early visits, a few examples of the staphylinid, *Micropelus tesserula* Curtis were also found among the ashes and, on the visit of 14th July 1991, a single example of *Pseudomicrodota jelineki* Krasa was sieved from the ashes, the first example of this beetle to be recorded from the British Isles (*Coleopterist's Newsletter*, 1991, **44**: 7).

Practically all the reports of *A. homeopathicus* in Britain record its occurrence at old bonfire sites but I have not come across any specifying how soon after the fire the beetle colonises a site or for how long the colony persists. We first investigated the ashes 14 months after the fire and the number of examples of the beetle present indicated that there must have been at least one generation at the site before we discovered it. This would suggest that the site was colonised in the summer of 1990, approximately six months after the fire. If this is correct, the colony persisted for a little short of two years.

Why *A. homeopathicus* chooses to inhabit bonfire sites is not clear. The first report of this beetle in Britain (Blair, 1938 *Ent. mon. Mag*. **74**: 53) mentioned the presence of the fungus *Pyronema confluens* on the burnt ground where the beetle was found. For this reason, the ashes at the Box Hill site were carefully inspected for fungal growth on each visit but no growth of any fungus was evident to the eye and no mycelia could be seen in one sample of ash examined microscopically. The nature of the association between beetle and fungus noted by some but not all recorders has not been determined. The absence of the fungus from the site on this occasion might suggest that the fungus is not essential to the beetle. Indeed the association may prove to be purely co-incidental. The association of *M. tesserula* with fire sites is well known though likewise unexplained. There are not many records of the *P. jelineki* anywhere in its range. As far as I am aware, none mentions bonfire sites.

I thank Mr R.M. Locock for permission to study beetles in the National Trust Box Hill Estate and Mr P. Orton for examination of a sample of ashes microscopically for signs of fungus.– J.A. Owen, 8 Kingsdown Road, Epsom, Surrey KT17 3PU.

***Rhodometra sacraria* (Linn.) (Lep.: Geometridae) – in Hampshire, 1994**

On the morning of 4th July 1994 I was pleased to see a specimen of *Rhodometra sacraria* settled on the foliage beside my light-trap at the cottage here. I was quite surprised, because I had worked at the light until 1am and had seen no sign of the specimen. I remember that my experience in Suffolk in 1947 led me to suppose that it was an early evening insect. Perhaps it also has a dawn flight, but I am none too confident in making that assumption in view of the fact that it is listed as "nocturnal" in *The Moths and Butterflies of Great Britain and Ireland*, 7: pt. 2, by A.M. Emmet, Harley Books, 1991.– ALASDAIR ASTON, Wake's Cottage, Selborne, Hampshire GU34 3JH.

TWO EASTERN EUROPEAN JOURNALS ON THE LEPIDOPTERA

Actias – the Russian journal of scientific lepidopterology: published mostly in English, German and French with extended Russian abstracts. The journal concentrates on morphology, taxonomy, zoogeography, evolution and development of butterflies and moths, both recent and fossil. A single volume was published in 1993 ($14.00 or DM23), and for 1994 two issues per year are planned (subscription $24 or DM46). These are individual subscriptions – institutional ones are a little higher.

Russian entomological Journal: published mostly in English with extended Russian abstracts. Covers morphology, taxonomy, zoogeography, evolution and development of insects, both recent and fossil. First published in 1992 in two issues (price $18 or DM27). In 1993 it became bi-monthly (price $54 or DM81), reverting to quarterly in 1994 (subscription $40 or DM64).

Subscriptions for both journals can be paid via Barclays Bank, and there are payment facilities in most European countries. Further details can be obtained from Dr K.G. Mikhailov, Zoological Museum of the Moscow Lomonosov State University, Herzen Street 6, K-9 Moscow 103009.

OBITUARY

Ronald Ian Lorimer, 1919 - 1994

Ian Lorimer died suddenly at his home in Orkney on 31st May, 1994. Born in Burton-on-Trent on 15th November, 1919, he was educated in Derby and spent his working life in the family retail business, becoming Managing Director. His father encouraged him and his brother Jim to study natural history, especially moths and butterflies, from a very early age, and gave them a book called *Eyes and no Eyes* before Ian was six years old. This evidently started them off, and Ian, who specialised in the moths, never looked back except for a brief period after the War: travelling alone to Orkney on a mothing expedition, his friend having had to withdraw, Ian found himself sitting next to a young lady, Daphne Freeth, on the aircraft. Apparently he was bowled over and, according to Daphne, very little

entomology was done during the whole of that expedition. Courtship took its place, and Ian and Daphne were married in 1951! Subsequently, however, entomology returned as Ian's major hobby and relaxation, in which he was lovingly and supportively encouraged by his wife.

The Lorimers were living in Totteridge in 1955 when the writer first met them. Already, Ian had a reputation as an enthusiastic, knowledgeable, but above all extremely generous entomologist. He was a keen breeder of moths, always distributing ova and sharing larvae among friends, eager to hear of their desiderata and tireless in obtaining specimens and offering help and advice. Perhaps his own special interest was the lepidopterous fauna of the Orkney Islands: he and his family would go to "Scorradale", in Orphir, at every opportunity; meanwhile he combed the literature and numerous collections for records, all of which were carefully checked. In 1970, he published "Orkney Lepidoptera, 1868-1968" in the *Entomologist's Gazette*, to which Supplements were later added. In 1983, *The Lepidoptera of the Orkney Islands* was published as a culmination of his studies. Ian was also closely involved with the Noctuidae volumes of the series, *Moths and Butterflies of Great Britain and Ireland*, writing the sections on Hadeninae in volume 9 and on Cuculliinae, Acronictinae, Plusiinae, Catocalinae and some smaller subfamilies in volume 10.

In 1981, Ian retired and the family moved permanently to "Scorradale". Regrettably, Ian was stricken with increasingly debilitating arthritis which made it increasingly difficult for him to visit places he loved, such as Berriedale on Hoy. Nevertheless, he continued to function as a potent catalyst for the study of Lepidoptera in the northern Isles, ever ready to help with identification of material sent him, and enthusiastic when new species or rare migrants were turned up. Arthritis also made it difficult for him to pursue his other hobby, gardening, but he remained an omnivorous reader, and his general knowledge was encyclopaedic.

For those of us who had the privilege of staying at "Scorradale", there are wondrous memories of generous hospitality, witty and erudite conversation . . . and the virtual certainty of interesting moths, whatever the Orkney weather.

Barry Goater

CONTRIBUTIONS

Readers are reminded that they are the main source of material for the Journal. **We urgently need papers, notes and observations for publication, particularly on British and European Lepidoptera, Coleoptera and other orders. Please see the inside front cover for details of how to contribute.**

LEPIDOPTERA RECORDS FOR DEVON

Could any Lepidopterists who have spent time doing field work in the County of Devon please send a list of their records for compilation on behalf of the Devon Recorder, Mr David Bolton. Legible field notes, not necessarily in any order, with indications of numbers seen and at least a four-figure map reference and any other relevant information would be appreciated. Every recorder will be acknowledged, and copy returned if requested. With thanks in anticipation, Roy McCormick, 36 Paradise Road, Teignmouth, Devon TQ14 8NR.

WANTED

29 drawer Mahogany cabinet. Telephone: 0202 877852

SPECIAL NOTICE

The annual Exhibition of the Amateur Entomologists Society will be held at Kempton Park Racecourse on Saturday 8th October, from 11.00 to 17.00.

Once again, the *Entomologist Record* will have a stand, and this year we will be trying to clear out our stocks of back numbers. There will be short runs, longer runs, and many individual volumes for sale. Most of the stock covers the years between 1952 and 1993, with a few remaining volumes from the late 1890's. Prices will be *very low*.

Recent volumes will be included, so new subscribers can benefit from this sale. We will also have a small selection of second-hand books and other journals for sale.

Remember to bring along your "wants" list – and we will try and fill the gaps in your series.

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION
(Founded by J.W. TUTT on 15th April 1890)

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Notes and observations

SPECIAL NOTICE. The Editor would be willing to consider the purchase of a limited number of back issues.

Printed in England by
Cravitz Printing Company Limited, 1 Tower Hill, Brentwood, Essex CM14 4TA. Tel: 0277 224610

PUBLISHED BI-MONTHLY

Vol. 106

Nos 11–12

THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

Edited by

P.A. SOKOLOFF, F.R.E.S.

Assistant Editors

J.A. OWEN, F.R.E.S. & A. SPALDING, F.R.E.S.

NOVEMBER/DECEMBER 1994

ISSN 0013-3916

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION

WHERE TO WRITE

EDITOR: All material for publication and books for review.
REGISTRAR: Subscription changes of address and non-arrival of the Journal.
HON. TREASURER: Advertisements and subscribers' notices.

Notes for Contributors

It would greatly help the Editor if material submitted for publication were typed and double spaced. Two copies are preferred. Please DO NOT use block capitals and DO NOT underline anything except scientific names. Word-processed text should not use italic, bold or compressed typeface. References quoted within the text can be abbreviated (eg Ent. Rec.), but those collected at the end of a paper should follow the standard *World List* abbreviations (eg Entomologist's Rec. J. Var.). When in doubt try to follow the style and format of material found in a current issue of the *Record*.

Illustrations must be the original (not a photocopy) without legend which should be typed on a separate copy. Photographs should be glossy, positive prints. Authors of long papers, or submitting valuable originals are advised to contact the Editor first.

Contributors are requested not to send us notes or articles which they are sending to other magazines.

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IOLAUS NEWPORTI, A NEW SPECIES OF LYCAENIDAE FROM NIGERIA (LEPIDOPTERA: LYCAENIDAE)

TORBEN B. LARSEN

358 Coldharbour Lane, London SW9 8PL.

THE AIM of this paper is to describe a most interesting and unexpected new species of *Iolaus* collected by K. Stiff in the Guinea savannah zone of Nigeria and brought to my attention by Mike Newport, after whom it is named in appreciation of his assistance in my work on West African butterflies.

The genus *Iolaus* is a large and complex one with more than 100 described species, all of which feed on mistletoes (*Loranthaceae*). Most are rainforest butterflies, many with wide ranges covering much of Africa, while some are montane with very limited distributions. However, some are adapted to more arid conditions and are limited to the various savannah zones, sometimes extending almost into true desert conditions.

Many of the species are very local and therefore rarely found by collectors on flying visits. However, once a colony is found, small numbers may be collected at intervals in the same spot.

The genus was comprehensively revised by Stempffer & Bennett (1958/1959). Their meticulous study provided a foundation for further work on the genus and not surprisingly many additional species were subsequently published, since much unpublished material was present in collections. Additionally, several new species are known only, or mostly, from bred material.

Stempffer & Bennett (1958/1959) subdivided the genus into what Stempffer (1967) calls "pragmatic" subgenera, while maintaining *Iolaus* as a "kind of super-genus". There has been a tendency to elevate these subgenera to generic level (eg D'Abrera (1980)), but this is doing violence to Stempffer's carefully considered opinion.

***Iolaus (Iolaphilus) newporti* sp. nov.**

The new species pertains to the subgenus *Iolaphilus* in all essential characters. It is most closely related to the Ugandan *Iolaus (Iolaphilus) vansomereni* Stempffer & Bennett, 1958 in both colour pattern and genitalia but differs far too strongly to be considered a subspecies of that distinctive butterfly. Both sexes of *I. vansomereni* are well-illustrated in D'Abrera (1980) and the description of the new species will be made in relation to that species.

Male upperside: The length of the forewing is 20mm. The ground-colour is a light sky-blue of less intensity than is usual in the genus. The costa is blackish-brown along the basal half of the cell, then widening gradually to form a moderate apical patch, which tapers towards the tornus where it is about 1mm broad. There is a small tooth at the end of the cell, slightly darker than the rest of the costa, which is usually sufficient to distinguish

it from all other similar *Iolaus*. The dark markings of *I. vansomereni* are slightly more extensive and the end-cell tooth is missing. The hindwing is blue of the same tone as the forewing. The costa is whiteish and space 6 greyish. The black margin is narrow, widening to about 1mm at the apex. There are small black tornal spots in spaces 1b and 2, crowned by traces of submarginal line and the surrounding blue area slightly suffused with white. There is no trace of red. The androconial patch is silvery-grey with a darker grey centre. In *I. vansomereni* the hindwing has clear red spots, the dark margin is much wider, and the costa and space 6 blackish.

Male underside: The forewing is unmarked white. The androconial brushes are beige. The hindwing is white with a poorly developed line of submarginal/postdiscal spots that stops in space 3. There are modest red tornal spots in spaces 1b and 2. The underside is very similar to that of *I. vansomereni*.

Female upperside: The ground-colour is predominantly white. The forewing has the same markings as the male, but the dark margin at the tornus is broader (2mm). The characteristic tooth in the cell is present. There is blue basal shading to the extent of about half the cell and slightly less in spaces 1a and 1b. The hindwing has only the faintest traces of blue shading. The submarginal/postdiscal line of spots is better developed than in the male and continues to space 5. The anal lobe is crowned with red. There is a black tornal spot in space 1b and an orange spot in space 2. The margin is broader than in the male, widening gradually to 2mm at the apex.

Female underside: The underside is like the male except for a slightly more prominent submarginal/postdiscal line of spots that continues to space 5 or 6. It is very similar to the female of *I. ismenias* Klug, 1834 which usually lacks the characteristic tooth in the forewing cell and has considerably less basal blue shading on the upperside. The female of *I. vansomereni* has very extensive orange tornal markings and a much wider dark margin on the hindwing upperside. The female of *I. menas* Druce, 1890 is also white, but never has the tooth at the end of the forewing cell and the postdiscal black line on the hindwing is more regular, especially on the underside.

Male genitalia: The male genitalia are closest to those of *I. vansomereni*. The subunci are slightly longer. The valve is considerably more squat and the distal projection shorter and more toothed. Its inner edge is evenly rounded and the whole valve broader. There is a distinct lobe on the outer edge where the distal projection begins. The penis differs little in shape, but both of the massive cornuti are of equal size; the distal one is much shorter in *I. vansomereni*.

Male holotype: Zuru, Sokoto State, Nigeria, 2.v.1980 (K. Stiff leg. in coll. M. Stewart). Genitalia preparation Larsen AYN. The holotype will be placed in The Natural History Museum, London and the genitalia renumbered (No. 29357).

Fig. 1. *Iolaus (Iolaphilus) newporti* **sp. nov.**
Top row: Uppersides. Bottom row: Undersides. Top left: Male holotype. Top right: Female paratype. Bottom: the same specimens, undersides.

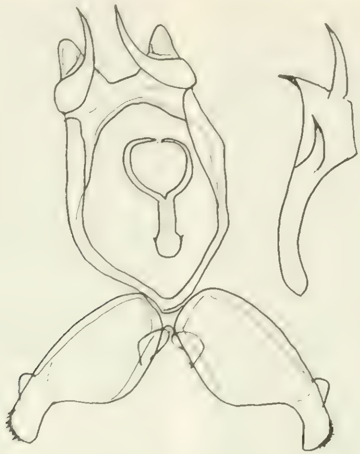

Fig. 2. The male genitalia of *Iolaus (Iolaphilus) newportii* **sp. nov.**

Paratypes: Three males and one female from same locality between 24.iv and 2.v.1980 in colls. M. Newport and J. Stewart.

I have not visited the type area, which is near Lake Kainji, but from the latitude it should be in the transition zone between Guinea (long grass) and Sudan savannah. This habitat remains somewhat unexplored for butterflies. *Iolaus (Epamera) alienus bicaudatus* Aurivillius, 1905 has been caught in the same area by K. Stiff indicating a very dry habitat.

There are no specimens of *I. newporti* in The Natural History Museum, London and Steve Collins (pers. comm.) assures me that he could not have missed the species if specimens were present in the National Museum of Kenya, Nairobi, Musée Royal d'Afrique Central, Tervuren, or in the Musée National d'Histoire Naturelle in Paris. None is present in the Allyn Museum, Florida which houses a vast collection of Ghana butterflies.

Acknowledgements

This is paper number seven in a series resulting from advance studies for the book project *Butterflies of West Africa — origins, natural history, diversity and conservation (1993-1998).* I am indebted to the Carlsberg Foundation of Denmark for their support to the West African field activities and to The Natural History Museum, London for assistance and access to their collections.

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THE PALE YELLOW FORMS OF *ATETHMIA CENTRAGO* HAW. (LEP.: NOCTUIDAE) AND TWO OF RECORDS FROM N.W. KENT

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ON 5th SEPTEMBER 1994 I noticed a very pale, seemingly unicolorous specimen of *A. centrago* near where the garden m.v. light trap had stood the previous night. It somewhat resembled a worn *Xanthia icteritia* Hufn. ab. *flavescens* Esp. for which it could be readily overlooked; it was however a fair specimen of the rare ab. *lutea* Brombacher, described as late as 1931, perhaps reflecting its rarity on the Continent. On 3rd September 1982 my garden m.v. light trap contained a somewhat similar specimen which was determined as ab. *flava* Rebel, also exceedingly rare.

It would appear that these forms were not known to Tutt; they are not mentioned in his *British Noctuae and their Varieties*, (1892). Four pale forms have been described, one being the type form of the species named by Hübner in 1809 as *xerampelina*. These forms are:

(a) *xerampelina* Hübn. (1809). Forewings pale yellow, the central area between the two red cross lines and below the reniform shaded with grey, fringe reddish.

(b) *pallida* Staud. (1891). Paler than the typical insect – unicolorous reddish-yellow, or reddish-grey, or rarely greyish-yellow. It has the usual two dark transverse lines which are light bordered; the dark reniform is usually present.

(c) *flava* Rebel (1933). Citron yellow without any reddish coloration, the two transverse lines indistinct and white edged on the convex side, the reniform also indistinct.

(d) *lutea* Brombacher (1931). The central band is obsolete, the insect being citron yellow and markingless as far as the narrow dark marginal field.

The *centrago* of Haworth (1809) is regarded as an aberration, and also the prevailing form in Britain – the intermediate form between the pale *xerampelina* and the dark, almost unicolorous ab. *unicolor* Staud., by Tutt.

The rarity of all these forms in Britain is confirmed by the paucity of specimens in the National Collection and that of A.J. Wightman who bred very large numbers of the species. Ab. *flava* is represented by three specimens – an ancient, somewhat disintegrated specimen labelled "Knaggs Collection" with no other data; one from Threllfield, Cumb. 23.ix.1963, Rev. Vine Hall, and the third from Pulborough, Sussex, 4.ix.1956, A.J. Wightman which is in the Wightman Collection of *A. centrago* incorporated into the National Collection. The cabinet label suggests that it is a weather-worn *centrago* of no particular interest! However, under the hand lens it is seen to be a quite good specimen; it has not been recognised as ab. *flava*.

Chalmers-Hunt (1961) mentions a specimen of ab. *lutea* from Darenth in the National Collection: its label provides no other data. It resides in a series of some half a dozen individuals, pale yellow, but additionally possessing the central fascia as a very pale replica of that found normally. They all, including the Darenth one, show a degree of darkening towards the termen, which is the distinguishing feature from ab. *flava*. I presume that this series has been assembled on the assumption that the specimens represent a homozygote and heterozygotes of the same form. Perhaps the latter could equally well be labelled ab. *xerampelina*.

The second illustration of the species in South's 1939 edition of his well-known work is labelled ab. *unicolor*, which it in no way resembles; it would appear to be ab. *pallida*. However, ab. *unicolor* is portrayed in the completely revised 1961 edition.

Ab. *flava* appears to be a slightly more extreme form than ab. *lutea*, and I notice that my specimen of the former at certain angles reflects an extremely pale pinkish central area, and *flava* also retains the reddish forewing fringe characteristic of the species. Nevertheless, the two forms are separable, and to have them named is, I think, far better than regarding them as merely extreme *xerampelina*. For Kent my specimen of *flava* appears to be the first, and the *lutea* the second.

Acknowledgements

I am most grateful to Mr D.J. Carter of the British Museum (Natural History) for giving me access to the National Collection and important unpublished literature.

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Poplar Kitten *Furcula bifida* Brahm (Lep.: Notodontidae) in Cardiganshire, Wales

A very local moth in Wales, the first record of it in Cardiganshire is of a specimen that I took at light at Trawscoed, near Aberystwyth in July 1954. After a lapse of forty years a specimen also came to the light trap at Cnwch Coch on 29th June 1994. There are I believe, no other records of this species in the county. According to Skinner (*Colour Identification Guide to Moths of the British Isles* 1984), Viking, this moth is widely distributed in parts of Wales, its scarcity in this county is possibly due to the lack of the larval foodplant Poplar. It is therefore significant that a small Forestry Commission plantation of some three hundred trees bordering the Nant Fruo at Trawscoed is about two kilometres away from where the first specimen was taken and one and a half kilometres from this latest recorded site.– Philip M. Miles, Werndêg, Cnwch Coch, Nr. Aberystwyth, Dyfed, Wales SY23 4LQ.

BUTTERFLIES IN CRETE, APRIL 1994

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THE FOLLOWING ACCOUNT is the result of two weeks' observation in the west central area of Crete, based on Spili, a village on the main road leading southwards from Rethymno, and making day excursions to sites of entomological and botanical interest.

Weather conditions on arrival were unsettled, with high winds, heavy rain and low temperatures at night; drier but cloudy weather succeeded, and after the second day there was a steady improvement and for most of the remainder of the fortnight, the days were increasingly hot and sunny.

The island's natural vegetation has been greatly modified as a result of man's activities. Virtually no forest cover remains, and the rocky limestone hills and mountains are subject to severe grazing pressure by goats, resulting in degradation of the maquis or "garrigue" and dominance of a few hardy plants resistant to this pressure, especially the Greek Spiny Spurge *Euphorbia acanthothamnus* and the Jerusalem Sage *Phlomis lanata*. On lower ground olive groves have largely taken the place of the original woodland, and the impoverished ground flora is frequently dominated by an invasive South African plant, *Oxalis pres-caprae*. Nevertheless, the island still does contain a very great deal of botanical interest, and the visit had been timed so that the spring flowers, especially the orchids, would be at their peak.

Although the impression gained was that the optimum time for butterfly numbers would have been a month or so later, and certain species mentioned by other visitors to the island as having been abundant in May – eg *Coenonympha thyrsis, Hipparchia cretica, Maniola jurtina* and *Thymelicus acteon*, were not yet on the wing, the spring broods of most of the mulitvoltine species were well developed. Population densities however tended to be much lower than might have been expected and in very few places were butterflies really abundant even in areas of apparently prime habitat. This apparent scarcity and less than maximum utilisation of available habitat has also been remarked on by Dennis (pers. comm.) who has visited the island twice, in the months of March and April, 1989 and 1990.

Sites with more than average density of butterfly species and/or individuals included the headland near Plakias (see species account for *Zerynthia cretica*), and the following three locations which I have selected for a more detailed account: (1) a lane leading down to a small river near Frati, (2) the abandoned village at Mili, and (3) Rethymno Fort.

(1) At Frati on 10.iv.94, a transect approximately 800 metres long was walked, downhill through olive groves to the river. The more sedentary species were almost wholly concentrated in a small, sunlit glade at the top of the slope beside the track, 700 metres along, and beside the river immediately below this point. Here *A. agestis, C. argiolus, P. icarus, L.*

phlaeas and *C. alceae* were present as well as the more vagile *P. brassicae, P. rapae, C. croceus* and a single *P. machaon*. During the remainder of the walk, *P. aegeria, P. brassicae* and *C. croceus* were generally distributed, though not in high numbers (total sightings of these three species 14, 17 and 10, during approximately two hours of observation), and there were odd sightings of *Z. cretica* (2), *C. argiolus* (2), *L. phlaeas, E. ausonia, I. podalirius, V. cardui* and *L. boeticus*.

(2) At Mili, a narrow path led from the main road down the eastern side of a narrow valley to cross a bridge over a stream; from here another path led southwards along the western side of the valley through the abandoned village. The total distance walked was approximately 800 metres of which the path from the road down to the bridge comprised just over 200 metres and the valley-side path through the abandoned village the remainder. Also, from the bridge in the other direction, a level path led northwards by the stream through shady olive groves to an old church, a distance of 230 metres. The distribution of butterflies seen during a total of four hours (10am to 2pm) at Mili on 12.iv.94 was as follows:

(i) Path from road to bridge excluding area adjacent to bridge (slope with west-facing aspect): *Z. cretica* (2), *P. brassicae* (6), *P. rapae* (1), *G. cleopatra* (4), *P. aegeria* (1), *P. icarus* (3).

(ii) Area adjacent to bridge (small, sheltered glade with full insolation at midday, south-westerly aspect): *Z. cretica* (2), *P. brassicae* (4), *P. rapae* (3), *C. croceus* f. *helice* (1, ovipositing), *G. cleopatra* (2), *L. sinapis* (1), *P. egea* (2), *P. aegeria* (2), *C. argiolus* (5), *A. agestis* (2), *P. icarus* (3). This glade was a meeting-point for flyways up the stream and across the hillside for the vagile Pierids and *Z. cretica* as well as providing hostplant-habitat for the sedentary Lycaenids.

(iii) Path through abandoned village, and former gardens (east-facing slope, becoming shady after midday): *P. brassicae* (11), *P. rapae* (4), *G. cleopatra* (5), *V. atalanta* (3), *P. aegeria* (15), *C. argiolus* (18), *L. phlaeas* (2).

(iv) Path upstream through olive groves to church: *Z. cretica* (2), *P. brassicae* (3), *P. rapae* (1), *G. cleopatra* (2), *C. argiolus* (5), *P. aegeria* (21), *L. megera* (1).

(3) Rethymno Fort is an area of unsprayed grassland which at the time of the visit was almost wholly carpeted by wild flowers, especially *Chrysanthemum coronarium* and various members of the Boraginaceae, on top of a high promontory north of the town of Rethymno on the island's north coast. The terrain is undulating with several limestone hillocks. Most of the area is completely open, though enough shade for a small colony of *P. aegeria* is provided at the west side by a few trees (and the wall of the fort), and there is also a clump of trees in the south-eastern corner. A

small colony of *P. icarus* was close to the latter on an east-facing slope. Otherwise, there was little if any hostplant-habitat for any of the butterflies observed and it appeared that they had flown in to "hill-top". Where had they come from? To the north and west of the fort are steep cliffs leading down to the sea. To the south and east, the fort is completely isolated from any potential hostplant-habitat in all directions for at least a mile by the town of Rethymno.

The following were recorded during two and half hours of observation (11.30am to 2pm) on 14.iv.94: *P. machaon* (5, including a mating – see species account), *I. podalirius* (1), *P. brassicae* (2), *E. ausonia* (6), *P. egea* (1), *V. atalanta* (6), *V. cardui* (3), *P. aegeria* (2), *L. megera* (7), *P. icarus* (4).

The total of 22 species recorded during the fortnight compares with the observations of Rutherford (1980 and pers. comm.) who recorded 22 species on his first visit in May 1979 and a total of 31 species in five visits. He adds in a draft note dated April 1994 that a further seven species have recently been reported by at least two other observers. Olivier (1993, pp.200-201) in his authoritative list of butterflies for Crete lists 40 species. Higgins & Riley (1970) show 36 species as occurring in Crete on their maps. Although Coghlan (1993) suggests 60 species plus a possible further three, I suspect that her list is more from guess-work than from factual observation. She does not include *E. ausonia* or *C. alceae*.

Spelling of Cretan place-names varies greatly between maps and indeed not all road-signs on the island spell names the same way (eg Rethymno, Rethimno or Rethimnon). I have used what appeared to be the spelling most regularly given on the road-signs.

Species accounts

In the following account the name, approximate number of sightings, localities where species was recorded (see Table 1) are given.

Papilio machaon L. (Swallowtail) (10) F, PL, PR, PS, RF

This species was wide-ranging and single individuals were seen in a wide range of habitats, the majority clearly on passage flights, including one flying rapidly up the hillside at Prases following the line of the track up the hill. In the late afternoon of 11.iv.94 one was observed pausing briefly to nectar on some flowers growing at the edge of a road bridge carrying an overhead bypass over a small suburban road at Platanas, near the town of Rethymno and described by Green (1994) as "in the middle of some of the most touristy development in Crete". The only site where more than one *P. machaon* were seen was Rethymno fort, where at least five were watched "hill-topping" on the flower-covered mound within the fort, and a mating was witnessed. There was no hostplant-habitat for this species within the fort, and as the fort is completely isolated from any other potential habitat by the town of Rethymno the butterflies must clearly have travelled a considerable distance, before and after mating.

Iphiclides podalirius L. (Scarce Swallowtail) (6) A, F, PR, RF, TH, VM
Occasional individuals were seen in widely differing habitats, including one "hill-topping" at Rethymno Fort; the butterfly had selected a group of trees at the south-east side of the fort for its territory.

Zerynthia cretica Rebel (Cretan Festoon) (56) AI, F, GK1, GK2, KK, KL, KR, MER, MI, PL, PR, SS1, VT
Although this endemic was seen in a wide variety of habitats it was clear that most sightings were of individuals on passage or on long-range patrolling flights. The exception was a rocky limestone headland near Plakias which was clearly a "headquarters" of the species. Here the butterflies adopted a quite different behaviour and were clearly remaining in established territories within a small area. The total length of the available habitat was approximately 450 metres. Dennis (in prep.) describes egg-laying of this species at this site. When Dennis made his second visit, in 1990, attempts were being made to terrace and cultivate the headland; however, these now seem to have been abandoned and the habitat is not badly degraded. On my first visit on 8.iv.94, only four *Z. cretica* were seen, the weather being largely overcast that day; on a second visit on 13.iv.94 in full sunshine, 21 were observed.

Pieris brassicae (Large White) (184) AI, AL, F, GK1, GK2, KK, MES, MI, S, RF, TH, VM
Interestingly, although during this visit this was one of the two most abundant species, R.L.H. Dennis and C.I. Rutherford (pers. comm.) both remark on its scarcity. Rutherford remarks that in five visits to the island he has only seen two or three examples. The butterfly clearly has its main brood very early in the season and it is to be conjectured what happens to it during the summer. In the crop-growing land beside the lane at Spili, close to where I was staying, fresh individuals were emerging daily and were frequently observed nectaring on patches of flowering *Brassica* plants, on thistles, and in the fields and olive groves. The butterflies appeared to roost among the olive and orange trees, though two were observed one night roosting on ornamental white lily-type flowers in an adjacent garden. Towards the end of the fortnight, the farmers grubbed most of the *Brassica* plants out and the butterfly would clearly be unable to continue breeding there.

Pieris rapae L. (Small White) (118) A, AI, AL, AT, F, G, GK1, GK2, KA, KL, MER, MES, MI, PL, PM, PR, S, SS1, SS2, TH, VM
Widely distributed in the lowlands, frequently with *P. brassicae* though normally less numerous.

Euchloe ausonia Hübner (Dappled White) (33) DV, F, GK1, GK2, KA, KR, MER, PL, PR, RF, SS1, TH, VM, VT
This species occurred in small numbers and the butterflies were always extremely active. Hill-topping activity was observed at Meronas and Rethymno Fort.

(It is possible that some butterflies recorded as this species could have been misidentifications of *Pontia daplidice* (or *P. edusa*); no definite sighting of a *Pontia* species was made.)

Colias croceus Geoffroy (Clouded Yellow) (73) A, AI, AL, AT, F, FO, FT, GK1, GK2, KA, KOT, MES, MI, PL, PR, S, SS1, SS2, TH, VT
This migrant was seen regularly in most types of habitat. Several females were of the *helice* form, and one of these was watched ovipositing on a very small patch of clover amidst dominant *Oxalis* in a small glade beside the path where it crossed the stream at the bottom of the valley at the abandoned village at Mili.

Gonepteryx cleopatra L. (Cleopatra) (36) A, AI, DV, GK2, KA, KOT, MER, MI, PL, TH
Regularly seen in most habitats where there was some semi-natural vegetation, including rocky hillsides where there were some trees and bushes.

Leptidea sinapis L. (Wood White) (32) FT, GK2, MI, S, VM
This butterfly appeared to form small, discrete colonies. There was a small population at Spili, along a lane leading gently downhill through olive and orange groves and various terraced crops, with several observations during the second week. The butterflies tended to patrol short distances along shelter-belts created by the terrace edges. A further isolated colony was at the site "GK2" on the Gious-Kambos plateau to the south-east of Spili, where two very large plane trees and a small area of scrub provided some shelter at the base of a rocky limestone hill. A female was watched ovipositing here, in complete shade, on an unidentified legume. A third site was the lake near Vamos where a discrete colony occupied a very restricted area of lush waterside vegetation at the lake edge in the shelter of a road embankment.

Nymphalis polychloros (Large Tortoiseshell) (1) AI
A single very worn example was seen at Agia Ioannis on 17.iv.94 when it settled briefly on a woodland track. Other members of the tour group had previously reported an unconfirmed sighting in an area of scrub near Meronas.

Vanessa atalanta L. (Red Admiral) (22) AL, FT, G, GK2, KA, MI, PR, RF, S
This migrant was seen in a variety of habitats, particularly the more fertile, cultivated areas, including orange orchards beside the lane near Arkadi and the abandoned gardens at Mili. Several butterflies were apparently hill-topping at Rethymno Fort 14.iv.94 as were smaller numbers of *V. cardui*.

Vanessa cardui L. (Painted Lady) (21) F, FO, GK1, GK2, KA, KOT, KR, PL, PS, RF, S, TH
Another migrant species seen in a variety of habitats, usually singly, and favouring more xeric biotopes and higher altitudes than *V. atalanta*. Only at Rethymno Fort did the two species occur together. Hill-topping was

observed at Rethymno Fort and a small limestone hill amidst agricultural land near Fourfouras.

Polygonia egea Cramer (Southern Comma) (8) GK2, KK, MI, MP, RF, SS
The few individuals seen were recently out of hibernation; two butterflies in the village in Spili, in front of shops, appeared to have overwintered in adjacent outbuildings or under overhangs. This species is thermophilic and regularly basks on very warm surfaces. At a small gorge near Gerakari in the late afternoon of 18.iv.94 two individuals were sharing a dry rocky streambed with *Zerynthia cretica*. Water had carved a deep, circular bowl out of the rock, and the *P. egea* were thermoregulating on the sides of this bowl which at that time received the last rays of sunshine.

Hipparchia cretica Rebel (Cretan Grayling) (1) SS
The visit was too early in the season to see this species on the wing; however, there was a dead specimen from the previous year, trapped inside a window in a restaurant in Spili – clear evidence that the butterfly occurs nearby.

Pararge aegeria L. (Speckled Wood) (191) AI, AL, AT, F, G, GK2, KL, MES, MI, PL, PR, PS, RF, S, SA, SS1, TH, VM
This appears to be the most successful species currently resident on the island and has been able to adapt very well to changes in habitat resulting from man's activities. Olive groves provide its requirements for "woodland" partly in sun and partly in shade, and the butterfly could be found in virtually all such habitats, indeed anywhere where there were a few trees to provide some shade and a shelter-belt. The lane through olive groves at Spili provided a good habitat and after *P. brassicae* this was the most regularly seen species there. Even in very marginal habitats, such as the mainly very open fort at Rethymno, and the steep, open, desiccated hillside near Prases, one or two *P. aegeria* had managed to obtain a footing where a few trees or bushes offered some shelter.

Lasiommata megera L. (Wall) (77) AI, DV, FO, G, GK1, GK2, KA, KR, MER, MI, PL, PR, PS, RF, RT, SS1, SS2, TH, VM
This thermophilic species was widely distributed, and to be seen on most sun-baked hillsides, where it was frequently the only butterfly present, and on hilltops, as well as occasional sightings at lower levels in marginal habitats. In coloration this species is very similar to the local form of *P. aegeria*; the habitat requirements of the two species are however so different that although both were very widely distributed it was only in rare instances, such as the hillside at Prases, that their habitats overlapped enough for the two species to be seen close together.

Lycaena phlaeas L. (Small Copper) (16) A, F, MES, MI, PL, PR, S, TH, VT
Very small colonies were found in small patches of suitable habitat – scraps of semi-natural vegetation within lowland agricultural land and valleys. A female was watched ovipositing at Mili 12.iv.94 on a small *Rumex* at the

edge of an abandoned garden in the valley bottom, the site having been chosen because it was sheltered – by the wall of the old building – but not overgrown. Two other Lycaenids, *A. agestis* and *P. icarus*, had similar habitat requirements to *L. phlaeas* and in several places the three were seen together.

Lampides boeticus L. (Long-tailed Blue) (7) F, FO, GK1, PL, PR, TH, VM
This migrant was recorded as singletons in widely different sites.

Celastrina argiolus L. (Holly Blue) (66) AL, F, FT, GK1, HR, MER, MI, PR, S, TH, VM
Although likely to be seen anywhere with suitable hedges or scrub, by far the best site found for this species was the abandoned village at Mili, where a total of 29 were sighted on 12.iv.94. The abandoned gardens in the valley here formed ideal habitat. Interestingly, where the path into this village crossed a bridge over a stream at the bottom of the valley, where a small glade at the bottom of the slope received the full sun around mid-day, the different habitats of *C. argiolus, A. agestis* and *P. icarus* overlapped and the three species could be seen in adjacent territories, *C. argiolus* (three individuals) utilising the ivy growing at low level adjacent to the bridge parapet, and the other two nearby on the open grass. Another strong colony was near Frati, the lane leading down to the river, where in a similar sunny glade the three species again were seen together, in this case also with *L. phlaeas.*

Aricia agestis Schiff. (Brown Argus) (14) F, GK1, KA, MI, S, SS1, TH, VT
Very small, isolated colonies could be found in small patches of habitat amidst agricultural areas and valleys. The hostplant was a species of *Geranium*; a few individuals were however seen in places where this plant did not appear to occur. In several sites, notably Mili, the lane at Spili and the lane leading down to the river near Frati, this species shared the habitat with *L. phlaeas* and *P. icarus.*

Polyommatus icarus Rott. (Common Blue) (81) AT, F, FO, FT, GK1, GK2, KA, MI, PL, PR, RF, S, SS1, TH, VT
This was the most common Lycaenid; its habitats were similar to those of *A. agestis* and *L. phlaeas* but appeared to be less restricted; the three species were often found together but at some sites, notably Agia Triada, and the small limestone hill near Fourfouras, *P. icarus* was seen in numbers but the other two were absent. At the latter site on 16.iv.94, an extraordinary sex-imbalance was noted; of ten butterflies seen on the hillside, all but one were females; however, three males were observed below the hill, some distance away, in a corner of a grass field.

Carcharodus alceae Esper. (Mallow skipper) (7) AT, F, MES, SS1, VM
Occasional sightings in sheltered sites in valleys, never more than one or two individuals in any location. This butterfly was very territorial and would keep returning to the same flower-head or similar perch.

Table 1. Localities

AI	Agia Ioannis	33°12'N	24°24'E	Track through woodlands; terraced hillside.
AT	Agia Triada	35°02'N	24°47'E	Olives, hillside, valley track.
A	Arkadi	35°16'N	24°38'E	Area around monastery.
AL	Arkadi, lane nr.	35°16'N	24°38'E	Orchards; olives; degraded maquis.
DV	Pass above Drimiscos/Vatos	35°08'N	24°32'E	Steep rocky hillside.
FO	Fourfouras	35°11'N	24°42'E	Flowery hillside, short turf. Fields below.
FT	Nr. Fourfouras	35°10'N	24°43'E	Track up hill, farmland.
FR	Frati	35°10'N	24°29'E	Track through olive groves down to river.
G	Nr. Gerakari	35°11'N	24°36'E	Hillsides; maquis; fields on plateau.
GK1	Gious-Kambos Plateau	35°10'N	24°33'E	Roadside; lane; open hillside; fields.
GK2	Gious-Kambos Plateau	35°10'N	24°34'E	Limestone hill above terraces, some large trees below escarpment.
HR	Hromonastiri	35°17'N	24°30'E	Hillside, fields.
KA	Kanebos	35°11'N	24°24'E	Rocky slopes; streamside; fields.
KK	Kisu Kambos	35°09'N	24°33'E	Small gorge.
KR	Kortaliotis	35°10'N	24°28'E	Deep rocky gorge.
KOT	Kotsifu	35°11'N	24°24'E	Degraded sloping meadow above gorge.
KL	Kournas Lake	35°18'N	24°16'E	Lakeside track; olive groves.
MER	Meronas	35°12'N	24°38'E	Roadside; scrub; small limestone hill.
MES	Mesonesia	35°12'N	24°36'E	Roadside; river; terraces; olives.
MI	Mili	35°18'N	24°30'E	Path through abandoned village on valley side; olive groves.
MP	Mt. Psyloritis (Foothills)	35°12'N	24°42'E	Rough hillside, sparse vegetation.
PL	Plakias	35°09'N	24°23'E	Rocky limestone headland; sandy seashore.
PL	Platanas	35°20'N	24°27'E	Wasteland by river, near sea.
PS	Prases	35°17'N	24°31'E	Wide, open, barren hillside above gorge.

PM	Preveli	35°07'N	24°27'E	Monastery, lush flowery hillside.
PR	Nr. Preveli	35°08'N	24°28'E	Riverside track; olive groves; open hillside.
RF	Rethymno Fort	35°20'N	24°28'E	Unsprayed hilltop inside fort, many wild flowers.
RT	Rethymno Town	35°20'N	24°28'E	Town.
SA	San Antonio (Patsos)	35°13'N	24°34'E	Small wooded gorge.
S	Spili	35°11'N	24°32'E	Short lane leading from main road to river; olive groves; oranges; walnuts; crops.
SS	Spili (Shops)	35°11'N	24°32'E	Shop fronts in village.
SS1	(S.E. of Spili)	35°10'N	24°32'E	Fields; roadside; very polluted stream.
SS2	(S.E. of Spili)	35°10'N	24°32'E	Small rocky knoll.
TH	Thronos	35°14'N	24°39'E	Slopes; lane past farms; olive groves; semi-natural patches.
VM	Vamos	35°22'N	24°11'E	Roadside; lakeside vegetation.
VT	Vatos	35°09N	24°33'E	Meadow; arable; semi-natural; olives.

Acknowledgements

I would like to express thanks to Ian A. Green of "Greentours", who organised and led the trip and made special arrangements for me to attend at the last minute and went out of his way to take me to the best butterfly sites; also to Roger L.H. Dennis for advice on sites worth visiting, particularly the *Z. cretica* headquarters near Plakias, and encouragement to make the observations and to write this paper.

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Pupation of the Lime Hawk, *Mimas tiliae*. L. (Lep.: Sphingidae)

On 7th August 1994 I dug up a few pupae of the Lime Hawk moth from the peat in which I had placed larvae about eight days previously. All but one had pupated. This last one was now much contracted and, as I looked at it, it started to grow restless. The following timetable of events may be of interest:

1. 1805. Larva restless and, during the next five minutes, threw three violent spasms;
2. By 1812 it was lying on its back. Ripples from the tail kept passing up the body to the head. Skin had loosened in the tail region;
3. At 1818 a split at the back of the head occurred and the top of the pupa appeared;
4. A regular pulsation then began at the place where the large top section became a deep ring;
5. By 1824 the pupa was fully visible. The large head section was a bright green colour. This was followed by three rings of fawn colour and, finally, the pointed tail portion of a dirty white colour;
6. At 1826 the pupa gave a final wriggle and the larval skin was completely discarded;
7. By 2000 the pupa had become a very dark brown colour, with a rough, matt appearance.

The total time from beginning of spasm to discard of the larval skin was 21 minutes. This was the first time I have been able to observe closely the changes from larva to pupa in a hawk moth.– BRIG. E.C.L. SIMSON, 4 Plowden Park, Aston Rowant, Oxon OX9 5SX.

***Anthophora* (Hym.) and Boraginaceae**

I was interested to read of J.A. Owen's (*Ent. Rec.* **106**: 20) *Anthophora plumipes* being particularly fond of *Pulmonaria*. This bee is very frequent in my garden, where its odd sexual antics (well written up elsewhere I believe) from March to May have often intrigued me. In my garden, too, it is specially attracted to *Pulmonaria*. At first, I was uncertain whether it was the blue colour, the hanging bell shape or some chemical(s) that proved the attractant, but I am now convinced it is the last. Despite the abundance of a wide range of available flowers at that time the only species that I have seen visited are *Pulmonaria* ssp. (pink as well as blue flowers), *Myosotis sylvatica*, *Brunnera macrophylla* and *Pentaglottis sempervirens* (all blue but with flowers totally different in shape from *Pulmonaria*), and *Symphytum orientale* (flowers similar in shape to those of *Pulmonaria* but pure white). The plants mentioned constitute the whole range of spring-flowering Boraginaceae in my garden.- CLIVE A. STACE, Cringlee, Claybrooke Road, Ullesthorpe, Lutterworth, Leicestershire LE17 5AB.

MICROLEPIDOPTERA REVIEW OF 1992

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WE WROTE OF 1991 that it was the first year for a long time that no species was added to the British list. The 1992 season was not an exciting one and it came as less of a surprise that the lack of new species announced seemed to continue, until the species first described as *Mompha divisella* Herr.-Schäff. on a new foodplant was found to be the closely related species *M. bradleyi* Reidl, which is new to Britain. It is good to learn of a new British species named after a living British entomologist.

There were several species formerly seen only once or very rarely, for which further records were made: *Infurcitinea albicomella* (Herr.-Schäff.) had not been seen for many years until 1990 when it was rediscovered in Devon and in 1992 one specimen was found in west Cornwall. *Callisto coffeella* (Zett.) was only recently added to our list and formerly known from one locality. It was found in a second Scottish locality and the life history in Britain has been described. *Phyllocnistis xenia* Hering was formerly known from just two localities in Kent, its discovery in Devon makes a remarkable extension of its known range and raise questions about the origin of the species; is it a long overlooked resident, is it transported with its hostplant or does it migrate? *Elachista eskoi* Kyrki & Karvonen and *E. pomerana* Frey are further recently added species for which additional records are of welcome interest. *Pleurota aristella* (Linn.) in Jersey was mentioned in the Review for 1989, but published information of this species' habits is fascinating. A second record of *Sclerocona acutellus* (Eversm.) taken in 1989 by P.J. Baker adds further mystery to the occurrence of this pyralid moth in the British Isles. *Stenoptilia islandicus* (Staud.) is part of the *S. bipunctidactyla* complex of species whose specific status is not entirely understood or agreed by specialist taxonomists (we are pleased to learn of electrophoretic studies on this group at Cardiff University which may help settle the issue). Its belated inclusion in the British list was on the strength of specimens taken by Canon G.A.K. Hervey in 1957, at first provisionally determined as *S. pelidnodactyla* (Stein). A successful search by entomologists in the Ben Lawers area has confirmed the resident status of the taxon in Scotland.

Adventive species always present a problem; sometimes one wishes they were not included in the British list, and yet there is always the possibility of capture or establishment in the wild, which makes it important for entomologists to be aware of their existence in case a specimen is taken in the field. *Cydia injectiva* (Heinrich) was found indoors in Peterhead in December 1992 and this yielded information of previous specimens indoors in the Sheffield area early in 1982. All had come from pine cones imported from North America.

Migration records are included in other articles in this *Journal*, but it is worthy of mention that two species *Etiella zinckenella* (Treits.) and *Zophodia grossulariella* (Hübn.) had only once been previously recorded. There was a further immigration of *Tebenna micalis* Mann and captures of *Sciota adelphella* (F.v.R.) gave further evidence that most records of this species are probably attributable to migration across the English Channel. A second record of *Gelechia senticetella* (Staud.) is probably brought about by importation of juniper bushes by the Garden Centre industry rather than migration.

A few species are conspicuous by their continued spread, usually after recent establishments in the British Isles. The most remarkable of these is *Caloptilia rufipennella* (Hübn.) and a map is provided showing the extension of the known range of this species during 1991-92. *Epiphyas postvittana* Walk., at first confined to the south-western peninsula of England has now become established in the open in North Wales. This species has become a pest of house plants grown under glass and so may extend its range to other places where the winters are mild enough to permit its survival. *Dioryctria schuetzeella* Fuchs was formerly confined to the eastern counties of southern England, so its occurrence in Hampshire in 1992, together with a record from the Isle of Wight in 1985, may have originated from these populations or may be as a result of fresh immigration.

Acleris umbrana (Hübn.) is a species seldom recorded in living memory and knowledge of its breeding in south Devon is encouraging. Other records of particular note to which we draw the reader's attention are *Stigmella prunetorum* (Staint.) from Scotland, *Coleophora vestianella* (Linn.) from Bedfordshire, *Brachmia lutatella* (Herr.-Schäff.) still resident at Portland and *Epiblema grandaevana* (Lien. & Zell.) from Northamptonshire.

Since our last Review there have been some publications of particular interest to microlepidopterists: the series of illustrated papers published by the British Entomological and Natural History Society continues with the British species of *Monochroa, Chrysoesthia, Ptocheuusa* and *Sitotroga* by P.A. Sokoloff and E.S. Bradford (*British Journal of Entomology & Natural History* **6**: 37-44), the British Epermeniidae by H.C.J. Godfray & P.H. Sterling (*ibid.* **6**: 141-144) and the British species of *Caryocolum* by P. Huemer (*ibid.* **6**: 145-157). *The Moths and Butterflies of Northumberland and Durham*, part 2, *Microlepidoptera* by T.C. Dunn and J.D. Parrack contains records of microlepidoptera, as does *Monmouthshire Lepidoptera: the Butterflies and Moths of Gwent* by Dr G.A. Neil Horton. A supplement to the Lepidoptera of Aberdeenshire and Kincardineshire (VCs 91-93) was published in this *Journal* **106**: 85-86. Further records of species taken are included in the report of the Annual Exhibition in the *British Journal of Entomology and Natural History:* **6**: 58-64. This also contains a coloured illustration of *Pempeliella ornatella* ([D.&S.]). Changes of names may be less welcome to amateur entomologists, but the intention is that eventual stability will be reached; changes of specific names of *Coleophora* spp. are

cited by A.M. Emmet in the *Entomologist's Gazette* **44**: 31-35 and **45**: 26, although some of the former had already been published in *Entomologist's Gazette* **38**: 42.

The full systematic list includes records submitted by recorders and those which have been published in entomological journals. Many thanks to those whose records are included, as always these are identified by their initials: D.J.L. Agassiz, B.R. Baker, H.E. Beaumont, K.P. Bland, K.G.M. Bond, M.F.V. Corley, B. Dickerson, A.M. Emmet, A.P. Foster, B. Goodey, E.F. Hancock, R.J. Heckford, M.W. Harper, J.R. Langmaid, D.V. Manning, N.H. Michaelis, D.O'Keefe, S.M. Palmer, M.S. Parsons, A.N.B. Simpson, B.F. Skinner, F.H.N. Smith, R.A. Softly, D.H. Sterling, M.J. Sterling, P.H. Sterling and M.R. Young. Titles are abbreviated for economy of space: *Ent. Gaz.* for *Entomologist's Gazette*, *Ent. Rec.* for the *Entomologist's Record and Journal of Variation*, and *BJENH* for the *British Journal of Entomology and Natural History*. Numbers in the left-hand column are those from *A checklist or label list of British Lepidoptera* by J.D. Bradley and D.S. Fletcher, 1986.

Again an attempt has been made to identify new vice-county records; which are underlined in **bold** type. The maps held by A.M. Emmet have been used for this purpose and we are grateful to Maitland Emmet for providing this information, and also for proof-reading.

Copies of the full list of records submitted are available from David Agassiz.

SYSTEMATIC LIST

NEPTICULIDAE

19 *Bohemannia quadrimaculella* (Bohem.) – Meathop, Cumbria (**69**) 8.vii.92 –MJS

36 *Ectoedemia quinquella* (Bedell) – Cockayne Hatley Wood (**30**) 10.x.92 – DVM; Worcestershire (**37**) – ANBS; Bowood Lake (**7**) mine on *Quercus robur* 17.xi.91, Dinton (**8**) mine on *Quercus robur* 7.xi.92 – SMP

48 *Trifurcula cryptella* (Staint.) – Talisker (**104**) one mine on *Lotus corniculatus* 10.vi.92, moth bred – MJS

49 *T. eurema* (Tutt) – Imber Ranges (**8**) mines 23.viii.92 – M.H. & E.G. Smith per SMP

56 *Stigmella dryadella* (Hofm.) – Aonach Beag, Ben Alder (97) 2.vii.92 – MRY

68 *S. salicis* (Staint.) – Aioter, N. Uist (**100**) 18.vii.92 – KPB, *BJENH* **6**: 59

88 *S. samiatella* (Zell.) – Worcestershire (**37**) – ANBS; near Woolhope (**36**) vacated mines 3.xi.92 – MRY; Southsea (**11**) one at m.v. light 25.v.92 – JRL, Winchester (11) vacated mines each autumn since 1988 – R.J.B. Hoare – *Ent. Gaz.* **44**: 123

93 *S. centifoliella* (Zell.) – Portsmouth (**11**) many mines & cocoons on *Rosa* 16.viii.92 – JRL

109 *S. prunetorum* (Staint.) – near Lanark (**77**) mines 5.ix.92 – RPK-J & KPB, *BJENH* **6**: 59, **New to Scotland**

OPOSTEGIDAE

119 *Opostega salaciella* (Treits.) – Kincraig (96) 1.vii.92, Loch Eil area (97) 2.vii.92, Talisker (104) 6.vii.92 – MRY

121 *O. crepusculella* Zell. – Kincraig (96) 1.vii.92 – MRY

INCURVARIIDAE

138 *Lampronia fuscatella* (Tengst.) – Blackmore Copse (**8**) 21.v.92 at m.v. light – SMP

143 *Nematopogon metaxella* (Hübn.) – Ballybrado House (**H7**) 1.vii.92 – KGMB

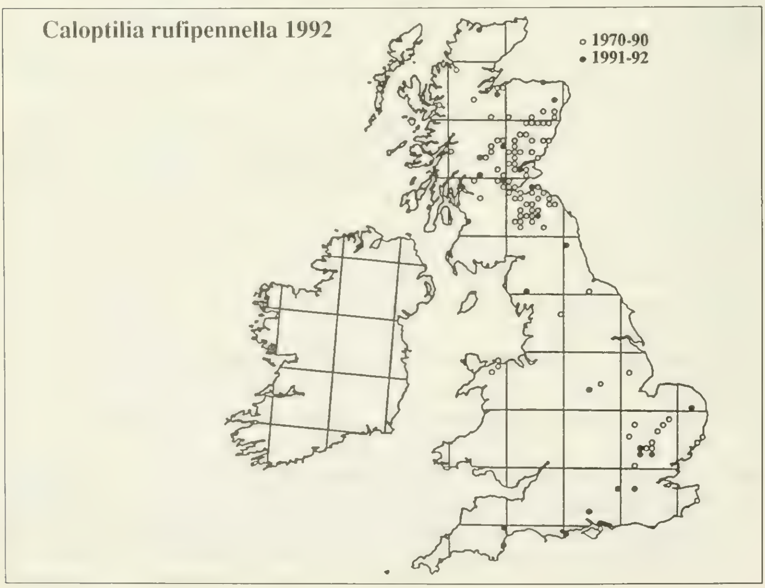
143a *N. magna* (Zell.) – Glen Columbkill (H9) v.91 – MWH & ANBS, *Ent. Gaz.* **44**: 56

145 *Nemophora minimella* ([D.&S.]) – Broadmoor Common (36) 28.vii.92 – MRY

146 *N. cupriacella* (Hübn.) – Pegsdon Hills (**30**) 15.vii.92 – DVM

147 *N. metallica* (Poda) – Daneway Banks (33) 1992 – MSP; Worcestershire (**37**) – ANBS

150 *Adela reaumurella* (Linn.) – West Wickham (16) 8.viii.92, possibly a second generation – JMC-H, *Ent. Rec.* **104**: 331



HELIOZELIDAE

154 *Heliozela sericiella* (Haw.) – Resipole (**97**) one vacated mine on *Quercus* 4.vii.92 – JRL, RMP & MRY

TINEIDAE

200 *Psychoides filicivora* (Meyr.) – Freshwater (**10**) cases on *Phyllitis* 18.v.92 – DHS, PHS & JRL

203 *Infurcitinea argentimaculella* (Staint.) – Redlynch (**8**) larval tubes in *Lepraria* 30.v.92 – DJLA, AME & JRL

204 *I. albicomella* (Herr.-Schäff.) – Kynance Cove (**1**) 6.vii.92 – R.J.B. Hoare, *BJENH* **6**: 60

205 *Ischnoscia borreonella* (Mill.) – Portland (9) three flying in evening 8.viii.92 – RJH & JRL

218 *Nemapogon variatella* (Clemens) – Old Hills, Worcs. (**37**) 30.v.92 – ANBS

219 *N. ruricolella* (Staint). – Cockayne Hatley Wood (**30**) 25.vi.92 – DVM

224 *Triaxomera parasitella* (Hübn.) – Great Barr (**39**) 17.vi.92 – R.G. Warren, *BJENH* **6**: 64

228 *Monopis weaverella* (Scott) – Trench Wood, Worcs. (**37**) 18.v.92 – ANBS

238 *Niditinea piercella* (Bentinck) – Trentham (**39**) 9.vii.92 – R.G. Warren, *BJENH* **6**: 64

LYONETIIDAE

256 *Leucoptera spartifoliella* (Hübn.) – Kinloch Laggan (**97**) several 2.vii.92 – JRL

257 *L. orobi* (Staint.) – Tulloch Moor (95) many tenanted mines on *Lathyrus montanus* 28.vi.92 – MWH, JRL, ANBS

BUCCULATRICIDAE

273 *Bucculatrix thoracella* (Thunb.) – Reading (22) 4.viii.92 adults on trunks of *Tilia x vulgaris* – BRB; Wimbledon (17) 25.v.92 – MSP

GRACILLARIIDAE

281 *Caloptilia populetorum* (Zell.) – Mitcham Common (17) larvae 15.vii.92 – R.K. Morris

283 *C. betulicola* (Hering) – Tulloch Moor (**95**) a few larval spinnings on *Betula* 28.vi.92 – MWH, JRL & ANBS

284 *C. rufipennella* (Hübn.) – Tongue (**108**) abundant 30.vii.92; Grasmere (**69**) vacated cones 6.viii.92, seemingly isolated – M.R. Shaw; Gight (93) cones 11.vii.92, Bolam Lakes (67) cones 16.vii.92, Helensburgh (99) cones 7.viii.92, Ayr Valley Woods (75) 13.viii.92, Fetteresso (91) 14.viii.92 – MRY; Mitcham Common (**17**) cones vii.92 – D.C. Lees; Guernsey (**113**) 16.viii.92 cones, moth bred –RJH; Ascot (**22**) vi.92 –DJLA; Exeter (**3**) bred 10.vi.92, Winchester (11) three bred from

Acer saccharinum – R.J.B. Hoare, *BJENH* **6**:61; Torquay (3) cones 11.ix.92, moths bred – RJH

292 *C. leucapennella* (Steph.) – Guernsey (**113**) 16.viii.92, cones on *Castanea sativa*, moths bred – RJH, *Ent. Rec.* **105**: 93

302 *Parornix fagivora* (Frey) – Salisbury Plain (**8**) vacated mine on *Fagus* 11.x.92 – SMP

302a *P. carpinella* (Frey) – Mitcham Common (**17**) mines 29.viii.91 – D.C. Lees

308 *P. finitimella* (Zell.) – Freshwater (**10**) one, 18.v.92 – JRL, DHS & PHS

310a *Callisto coffeella* (Zett.) – Corrie Fee, Glen Doll (**90**) cocoons 7.iv.92, moths bred – KPB, *Ent. Gaz.* **44**: 15-16, *BJENH* **6**: 59, second British locality and description of life history

314 *Leucospilapteryx omissella* (Staint.) – Imber Ranges (**8**) abundant in many localities – M.H. & E.G. Smith per SMP

317 *Phyllonorycter heegeriella* (Zell.) – Clunes (**97**) one 5.vii.92 – JRL, RMP & MRY

321a *P. platani* (Staud.) – Harlow, Chelmsford & Maldon (**19**), Grays, East Ham, Upminster, etc. (**18**) mines xi.92 – DJLA

325 *P. mespilella* (Hübn.) – Ballinure (**H4**) bred from *Cotoneaster* ii-iii.92 – KGMB

327 *P. cydoniella* ([D.&S.]) – Curraghbinny (**H4**) mines on *Malus sylvestris* 11.x.92 – KGMB

332a *P. leucographella* (Zell.) – By the winter of 1992-93 this species had continued its spread as far as Margate (15), Bracknell (**22**). Milton Keynes (**24**), Wootton (**32**), Fordham (29), Bures (**26**) and Woodbridge (25). There was also a separate population at Oxford (**23**) – DJLA

333 *P. viminiella* (Sirc.) – Havant Thicket (11) many mines on *Populus tremula* 11.x.92, moths bred – JRL

335 *P. salicicolella* (Sirc.) – Curraghs (**71**) mine 29.vii.92 – KGMB

334 *P. strigulatella* (Zell.) – Mines on underside, a correction to *MBGBI* Vol. 2 – J. Robbins *Ent. Rec.* **105**: 259-260 & AME *ibid.* **106**: 55-56

345 *P. rajella* (Linn.) Hampstead (21) mine 1992 – R.A. Softly

354 *P. emberizaepenella* (Bouché) – Enniskerry (**H20**) mines on *Symphoricarpus* 17.x.92 – KGMB

358 *P. froelichiella* (Zell.) – Coom Wood (**H3**) mine 4.x.92 – KGMB

360 *P. kleemannella* (Fabr.) – Coom Wood (**H3**) mines 4.x.92 – KGMB; Hampsted (**21**) mine, 1992, moth bred – R.A. Softly

361 *P. trifasciella* (Haw.) – A discussion of its voltinism – C.W. Plant, *Ent. Rec.* **105**: 138-139

364 *P. geniculella* (Rag.) – Winchester (11) mines on *Acer saccharinum* 5.x.92 moth bred – DHS & JRL

365 *P. comparella* (Dup.) – Moor Copse NR (22) mines on *Populus canescens* 10.ix.92, moths bred, confirms earlier record – BRB

369 *Phyllocnistis xenia* Hering – Budleigh Salterton (**3**) 3 & 17.x.92, mines on *Populus canescens* – RJH, *Ent. Gaz.* **44**: 124

CHOREUTIDAE

386a *Tebenna micalis* (Mann) – Gower (**41**) larvae 19-20.viii.92, moths bred – DJLA; Plympton (3) larvae in several localities 1,2 & 7.viii.92, larvae & cocoons 26 & 30.ix.92, Wembury (3) larvae 2.viii.92, Embankment, Plymouth (3) larvae and cocoons 6.viii.92, Heybrook Bay (3) larvae 6.viii.92, Chelson Meadow, Plymouth (3) larvae and one adult 8.viii.92, Thurlestone (3) 2 cocoons 31.viii.92, The Warren near Noss Mayo (3) a few cocoons 5.ix.92, Plympton (3) 19.ix.92 one male at light. All larvae on *Pulicaria* – RJH, *Ent. Gaz.* **44**: 170-180

387 *Prochoreutis sehestediana* (Fabr.) – Cooper's Hill (**30**) 14.viii.92 – DVM

388 *P. myllerana* (Fabr.) – Kilcolman (**H5**) several vi. & viii.92 – KGMB; Resipole (**97**) many larvae on *Scutellaria* 4.viii.92, moths bred – JRL, RMP & MRY

GLYPHIPTERIGIDAE

393 *Glyphipterix equitella* (Scop.) – Bradford-on-Avon (7) 30.vi.91 – M.H. Smith, *Ent. Rec.* **105**: 93-94

YPONOMEUTIDAE

413 *Argyresthia sorbiella* (Treits.) – Newtonmore (**96**) one 1.vii.92 – KPB, MWH, JRL, ANBS, MRY; Resipole (**97**) one v.viii.92 – JRL, RMP & MRY

424 *Yponomeuta evonymella* (Linn.) – Resipole (**97**) a few larval nests on *Prunus padus* 4.vii.92 – JRL, RMP &MRY

436 *Pseudoswammerdamia combinella* (Hübn.) – Bettyhill (**108**) 31.v.92 – MRY

439 *Swammerdamia compunctella* Herr.-Schäff. – Wyre Forest NNR, Worcs. (**37**) 27.v.92 – ANBS

443 *Cedestis subfasciella* (Steph.) – Kinlocheil (**97**) a few at m.v. light 3-4.vii.92 – JRL, RMP & MRY

444 *Ocnerostoma piniariella* (Zell.) – Redlynch (**8**) one at m.v. light 4.vi.92 – DJLA, AME & JRL

449 *Prays fraxinella* (Bjerk.) – Resipole, Arisaig, Clunes (**97**) a few 4-5.vii.92 – JRL, RMP & MRY

458 *Ypsolopha alpella* ([D.&S.]) – Richmond Park (17) 26.vi.92 – MSP

469 *Eidophasia messingiella* (F.v.R.) – Southsea (**11**) one at m.v. light 14.vi.92 – JRL

COLEOPHORIDAE

490 *Coleophora lutipennella* (Zell.) – Bentley (**25**) 17.x.92, Pickworth (**55**) 18.x.92, case on *Quercus* – AME

492 *C. flavipennella* (Dup.) – Resipole, Spean Bridge (**97**) several 4-5.vii.92 – JRL, RMP & MRY

494 *C. coracipennella* (Hübn.) – Freshwater (**10**) case on *Prunus spinosa* 18.v.92, moth bred – DHS, PHS & JRL

494a *C. prunifoliae* Doets – Abbots Ripton (**31**) 15.v.92, cases on *Prunus spinosa,* moths bred – AME

495 *C. spinella* (Schrank) – Bentley (**25**) 17.x.92, cases on *Crataegus* – AME

496a *C. adjectella* Herr.-Schäff. – West Wood, Knotting (**30**) 27.ix.92 small cases on *Prunus spinosa* – JRL, AME & DVM

498 *C. alnifoliae* Barasch – Iver (**24**) 1.vi.92 – RWJU, *BJENH* **6**: 64

501 *C. siccifolia* Staint. – Great Plantation (3) 26.vi, 3 & 5.vii.92, cases on *Sorbus aucuparia,* moths bred – RJH

502 *C. trigeminella* Fuchs – Freckenham (**26**) 29.iv.92, case on *Malus,* moth bred – AME

509 *C. violacea* (Ström.) – Redlynch (8) one 4.vi.92 – DJLA, AME & JRL

510 *C. juncicolella* Staint. – Creag Meagaidh NNR (**97**) a few 29.vi.92 – MWH, JRL, RPK-J & ANBS

515 *C. albitarsella* Zell. – Bloody Oaks (**55**) 18.x.92, cases on *Glechoma hederacea* – AME

517 *C. frischella* (Linn.) – Royston (**20**) 21.vii.92, Euston (26) 9.viii.92, Horseheath (**29**) 17.vii.92, bred from *Trifolium repens* – AME

521 *C. conyzae* Zell. – Great Holland Pits (**19**) 12.ix.92, cases on *Pulicaria* – AME

530 *C. lixella* Zell. – Talisker (104) 6.vii.92 – MRY

532 *C. albidella* ([D.&S.]) – Bentley Wood (**8**) 3.vi.92, case on *Salix aurita* – AME, DJLA, JRL & SMP

533 *C. bernoulliella* (Goeze) (= *anatipennella* (Hübn.)) – Sharnbrook (**30**) 27.ix.92, two cases on *Tilia,* a new foodplant in Britain – AME & JRL

535 *C. ibipennella* Zell. (= *ardeaepennella* Scott) – Bentley (**25**) 17.x.92, cases on *Quercus* – AME

537 *C. kuehnella* (Goeze) (= *palliatella* (Zinck.)) – Bedford Purlieus (**32**) 18.x.92, case on *Quercus* –AME

541 *C. pyrrhulipennella* Zell. – Landford (**8**) several 1.vi.92 – DJLA, AME & JRL

548 *C. niveicostella* Zell. – Pegsdon Hills (**30**) 15.vii.92 – DVM

552 *C. lassella* Staud. – Yarmouth (**10**) 19.v.92 – DHS & PHS

555 *C. follicularis* (Vallot) – Discussion of races on different foodplants – AME, *Ent. Rec.* **104**: 303-304

556 *C. trochilella* (Dup.) – Larkhill (8) cases on *Artemisia vulgaris* 31.v.92 – DJLA, AME, JRL & SMP

560 *C. paripennella* Zell. – Larkhill (8) cases on *Centaurea scabiosa* and *Arctium* 31.v.92 – DJLA, AME, JRL & SMP; Kincraig (**96**) one case on *Cirsium heterophyllum* 1.vii.92 – KPB, MWH, JRL, ANBS & MRY

563 *C. argentula* (Steph.) – Guernsey (**113**) cases 20.viii.92 – RJH; Larvae on *Plantago lanceolata* – M.H. Smith, *Ent. Rec.* **105**: 21-22

572 *C. vestianella* (Linn.) – Cockayne Hatley (**30**) vii-viii.92 – DVM, *Ent. Rec.* **105**: 181

577 *C. artemisicolella* Bruand – Wenham (**25**), Sawston (**29**) x.92, cases on *Artemisia vulgaris* – AME

583 *C. tamesis* Waters – (= *cratipennella* sensu auctt.) – Arisaig (**97**) one 5.vii.92 – RMP; Bentley Wood (**30**) 8.ix.92, cases on *Juncus articulatus* – AME

589 *C. clypeiferella* Hofm. – Dinton (**8**) 8.viii.92 – SMP; Early records from Shoeburyness (18) – AME, *Ent. Rec.* **105**: 140-141

ELACHISTIDAE

598a *Elachista eskoi* Kyrki & Karv. – Kincraig (**96**) one 28.vi.92 – ANBS

600 *E. luticomella* Zell. – Saffron Walden (19) 12.vi.92 – AME

605 *E. pomerana* Frey – Wicken Fen (29) tenanted mines on *Calamagrostis epigejos* 11.iv.92, moths bred – AME & JRL, *Ent. Gaz.* **44**: 111-114

606 *E. humilis* Zell. – Potton Wood (**30**) 14.vi.92 – DVM

610 *E. argentella* (Clerck) – Kincraig (**96**) several 28.vi.92 – MWH, JRL & ANBS

611 *E. triatomea* (Haw.) – Talisker (104) 6.vii.92 – MRY

613 *E. subocellea* (Steph.) – Talisker (104) 6.vii.92 – MRY

626 *Biselachista serricornis* (Staint.) – Loch Iadaidh, N. Uist (**100**) 17.vii.92 – KPB, *BJENH* **6**: 59

628 *B. eleochariella* (Staint.) – Kincraig (96) 1.vii.92 – MRY; Malaclete, N.Uist (**100**) 11.vii.92 – KPB, *BJENH* **6**: 59

630 *B. albidella* (Nyl.) – Landford (**8**) one 1.vi.92 – DJLA, AME & JRL; West Melton (**63**) 16.vii.92 – HEB

631 *Cosmiotes freyerella* (Hübn.) – Carrauntoohil (H1) two at 1800ft. 8.viii.92 – KGMB

632 *C. consortella* (Staint.) – Wath Wood (**63**) 10.viii.90 – HEB

OECOPHORIDAE

635 *Schiffermuelleria subaquilea* (Staint.) – Haytor (**3**) 31.v. & 7.vi.92 – RJH

640 *Batia lunaris* (Haw.) – Bubwith (**61**) 18.vii.92 – G.B. Summer, det. HEB

654 *Pleurota bicostella* (Clerck) – Langass Burial Cairn, N. Uist (100) 16.vii.92 – KPB, *BJENH* **6**: 59

655 *P. aristella* (Linn.) – Account of its occurrence in Jersey (113) – MWH, *Ent. Gaz.* **44**: 11-13

659 *Amphisbatis incongruella* (Staint.) – Haldon Hill (**3**) 16.iv.92 – RJH

660 *Pseudatemelia josephinae* (Toll) – Clunes (**97**) two 5.vii.92 – JRL, RMP & MRY

698 *Agonopterix kaekeritziana* (Linn.) – Newtonmore (**96**) one larva on *Centaurea nigra* 1.viii.92 – KPB, MWH, JRL, ANBS & MRY

712 *A. astrantiae* (Hein.) – Glen Columbkill (H9) larvae v.91, moths bred – MWH &ANBS, *Ent. Gaz.* **44**: 56 (given last year without reference)

877 *Stathmopoda pedella* (Linn.) – Saffron Walden (19) 23.vii.92 – AME

GELECHIIDAE

727a *Metzneria aprilella* (Herr.-Schäff.) – Barnack Hills & Holes NNR (**32**) – C. Gardiner, *Ent. Rec.* **106**: 95

733 *Eulamprotes wilkella* (Linn.) – Blue Point (**71**) several 26.vii.92 – KGMB

736 *Monochroa lucidella* (Steph.) – Dungeness (15) 14.vii.92 – MSP; Druridge (**67**) 15.vii.92 – MRY

737 *M. palustrella* (Doug.) – Cockayne Hatley (**30**) vi.92 – DVM; Lower Test Marshes NR (**11**) – per DHS

747 *Chrysoesthia sexguttella* (Thunb.) – Spurn (61) larvae on *Halimione portulacoides* 26.ix.92 – HEB, *Ent. Rec.* **105**: 226

752 *Aristotelia ericinella* (Zell.) – Cooper's Hill (**30**) 26.vii.92 – DVM

758 *Recurvaria leucatella* (Clerck) – Lugwardine (**36**) 27.vii.92 – MRY

760 *Exoteleia dodecella* (Linn.) – Kinlocheil (**97**) a few 3-4.vii.92 – JRL, RMP & MRY

764 *Pseudotelphusa scalella* (Scop.) – Richmond Park (17) 6.vi.92 – MSP; Blackmore Copse (8) 21.v.92 – SMP

765 *Teleiodes vulgella* (Hübn.) – Shrewsbury (**40**) 26.vi.92 – JRL

790 *Chionodes fumatella* (Doug.) – Sharnbrook (**30**) 27.vii.92 – DVM

796 *Aroga velocella* (Zell.) – Druridge (**67**) 15.vii.92 – MRY

801a *Gelechia senticetella* (Staud.) – Petts Wood (**16**) 23.vii.92 – D.O'K, *Ent. Rec.* **105**: 176, second British specimen.

809 *Pexicopia malvella* (Hübn.) – Leckford (**12**) 19.vi.92 – DHS

820 *Scrobipalpa artemisiella* (Treits.) – Newton-ferry, N.Uist (**100**) 18.vii.92 – KPB, *BJENH* **6**: 59

828 *Caryocolum viscariella* (Staint.) – Donhead St Mary (**8**) larvae 5.v.92 – JRL

834 *C. tricolorella* (Haw.) – Dinton (**8**) vacated spinnings 3.v.92 – JRL & SMP

840 *Reuttia subocellea* (Steph.) – Streatley (**22**) larvae 12.i.92, moths bred – BRB

843 *Aproaerema anthyllidella* (Hübn.) – Old Head of Kinsdale (**H3**) larvae ii.92 – KGMB

844 *Syncopacma larseniella* (Gozm.) – Bentley Wood (**8**) larvae on *Lotus uliginosus* 3.vi.92 – DJLA, AME, JRL & SMP

851 *Acanthophila alacella* (Zell.) – Lover (8) 4.viii.92 – D. Brotheridge, *Ent. Rec.* **105**: 290

853 *Anacampsis populella* (Clerck) – Kinloch Laggan (**97**) many spinnings on *Populus tremula* 2.vii.92 – JRL

859 *Psoricoptera gibbosella* (Zell.) Collyweston Great Wood (32) 3.ix.92 – MSP; Hatfield Forest (19) 6.ix.92 – DJLA

862 *Dichomeris marginella* (Fabr.) – Shrewsbury (**40**) 26.vi.92 – JRL

866 *Brachmia blandella* (Dougl.) – Easton Hornstocks (**34**) – C. Gardiner, *Ent. Rec.* **106**: 95

869 *B. lutatella* (Herr.-Schäff.) – Portland (9) 8.viii.92 at light – RJH & JRL

BLASTOBASIDAE

873 *Blastobasis lignea* Wals. Worcestershire (**37**) – ANBS; Helensburgh (99); abundant 7.viii. 92, Crathes (91) one 30.viii.92, Bettyhill (108) several 1.vi.92, Druridge Bay (67) two 15.vii.92 – MRY; Lichfield (**39**) 8.vii.92 – R.G. Warren, *BJENH* **6**: 64

MOMPHIDAE

883 *Mompha raschkiella* (Zell.) – Kinlocheil, Spean Bridge (**97**) a few mines on *Epilobium angustifolium* 3-5.vii.92 – JRL, RMP & MRY; Kilkenny (**H11**) vacated mine 30.viii.92 – KGMB

889a *M. bradleyi* Reidl – First published as larvae of *M. divisella* Herr.-Schäff. on *Epilobium hirsutum* in Herefordshire (36) – MWH, *Ent. Gaz.* **44**: 14. Subsequently indentified as a species **new to Britain** *Ent. Gaz.* **45**: 151-156

COSMOPTERIGIDAE

907 *Dystebenna stephensi* (Staint.) – Richmond Park (17) 26.vi.92 – MSP; Brockenhurst (11) 25.vii.92 – R.J.B. Hoare, *BJENH* **6**: 62

SCYTHRIDIDAE

914 *Scythris crassiuscula* (Hübn.) – Pegsdon Hills (**30**) 15.vii.92 – DVM

TORTRICIDAE

926 *Phalonidia manniana* (F.v.R.) – Morenish Meadows SSSI (**88**) larvae in *Mentha* 27.vii.91, moth bred KPB, *BJENH* **6**: 59

935 *Cochylimorpha alternana* (Steph.) – Dungeness (15) 10.vii.92 – MSP

936 *C. straminea* (Haw.) – Carbost (104) 7.vii.92 – MRY

946 *Aethes rubigana* (Treits.) – Moulin Huet (113) 4.vii.92 – R. Austin per BFS

947 *A. smeathmanniana* (Fabr.) – Werrington (**32**) – P.A. Waring, *Ent. Rec.* **106**: 95

948 *A. margaritana* (Haw.) – Dungeness (15) 8.vii.92 – MSP

951 *A. beatricella* (Wals.) – Newstead Abbey Park (56) 23.vi.92 – K. Cooper

955 *Eupoecilia ambiguella* (Hübn.) – Holywell, Eastbourne (14) 27.ix.92 – MSP

960 *Falseuncaria ruficiliana* Gregs. – Imber Ranges (8), larvae on *Rhinanthus minor*, moths bred – M.H. Smith, *Ent. Rec.* **106**: 26-28

965 *Cochylis hybridella* (Hübn.) – Hampstead (21) 27.viii.91, 11 & 27.vi.92 – R.A. Softly

966 *C. atricapitana* (Steph.) – Sutton (**36**) 27.vii.92 – MRY

968 *C. nana* (Haw.) – Tulloch Moor (**95**) one 28.vi.92 – JRL, MWH, ANBS & MRY

985 *Cacoecimorpha pronubana* (Hübn.) – Douglas (H4) several v.-viii.92 – KGMB; a further foodplant – A.A. Allen, *Ent. Rec.* **104**: 288

987 *Ptycholomoides aeriferanus* (Herr.-Schäff.) – Cottingham (**61**) 8.vii.92 – P.A. Crowther; Newstead Abbey Park (56) two 1992 – K. Cooper

990 *Aphelia unitana* (Hübn.) – Kilcolman (**H5**) common 11.vi.92 – KGMB

993 *Clepsis spectrana* (Treits.) – Carbost (**104**) 7.vii.92 – MRY

998 *Epiphyas postvittana* (Walk.) – Glan Conwy (**50**) 5 between 30.v & 5.vi.92 – HNM; Gresford (50) one – B. Formstone per HNM, *Ent. Rec.* **105**: 91

999 *Adoxophyes orana* (F.v.R.) – Saffron Walden (19) 7.viii.92 – AME

1001 *Lozotaeniodes formosanus* (Gey.) – Bubwith (**61**) 2.vii.92 – G.B. Summers; South Cave (61) – D.B. Cutts per HEB; Cottingham (**61**) 27.vii.92 – P.A. Crowther

1002 *Lozotaenia forsterana* (Fabr.) – Arisaig (**97**) one 4.vii.92 – JRL, RMP & MRY

1023 *Cnephasia genitalana* (P.&M.) – Winchester (11) 28.vii.90 – DHS

1038 *Acleris laterana* (Fabr.) – Newstead Abbey Park (56) 21.iv.92 – K. Cooper

1050 *A. boscana* (Fabr.) – Ufton Park (22) pupa on *Ulmus glabra* 1.x.91 – BRB; Cockayne Hatley (**30**) vii.92 – DVM

1051 *A. logiana* (Clerck) – Botley Wood (11) two bred from birch spinnings collected 20.ix.92 – PHS; see also *Ent. Gaz.* **44**: 154

1052 *A. umbrana* (Hübn.) – Heybrook Bay (3) 18.ix.92 larva on *Prunus spinosa,* moth bred 25.x.92 – *RJH, Ent. Gaz.* **44**: 178

1054 *A. cristana* ([D.&S.]) – Population decline and five new forms described – R. Fairclough, *Ent. Rec.* **105**: 183-185

1071 *Olethreutes arbutella* (Linn.) – Inveraver NNR (108) 3.vi.92 – MRY

1092 *Apotomis turbidana* (Hübn.) – Clunes (**97**) two 5.vii.92 – JRL, RMP & MRY

1093 *A. betuletana* (Haw.) – Kinlocheil (**97**) 3.vii.92 – JRL, RMP & MRY

1099 *Endothenia marginana* (Haw.) – Cornhill (**94**) 2.viii.92 – MRY

1104 *E. quadrimaculana* (Haw.) – Kinlocheil, Resipole (**97**) 3-4.vii.92 – JRL, RMP & MRY

1119 *Ancylis geminana* (Don.) – Knockmichael Mt. (**H2**) 14.vi.92 – KGMB

1123 *A. laetana* (Fabr.) – Kinloch Laggan (**97**) a few 2.vii.92 – JRL

1128 *A. myrtillana* (Treits.) – Worcestershire (37) – ANBS, first record since 1888

1136 *Epinotia immundana* (F.v.R.) – Wimbledon Common (17) 10.v.92 – MSP

1162 *Rhopobota myrtillana* (H. & W.) – Knocknakilla (**H4**) 19.vi.92 – KGMB

1170 *Gypsonoma oppressana* (Treits.) – Exeter (**3**) 26.vi.92 – R.J.B. Hoare, *BJENH* **6**: 61

1179 *Epiblema incarnatana* (Hübn.) – Stockbridge (12) 12.viii.92 – R.J.B. Hoare, *BJENH* **6**: 61

1181 *E. grandaevana* (L. & Z.) – Northants (32) records – C. Gardiner & M. Hillier – *Ent. Rec.* **105**: 239-240

1185 *E. cnicicolana* (Zell.) – Hook Heath NR, Southwick (11) 9.vi.92, a few by day – JRL & DHS

1192 *Eucosma conterminana* (Herr.-Schäff.) – Winchester (**11**) 9.viii.92 – DHS; Worcester & Evesham (**37**) larvae ix.91, moths bred – ANBS

1208 *Blastesthia posticana* (Zett.) – Bransford (**37**) 23.v.92 – ANBS

1215 *Cryptophlebia leucotreta* (Meyr.) – Freshwater (**10**) 29.ix.89 – S.A. Knill-Jones, *Ent. Rec.* **106**: 114

1219 *Lathronympha strigana* (Fabr.) – Tulloch Moor (**95**) one 28.vi.92 – MWH, JRL & ANBS

1222 *Strophedra nitidana* (Fabr.) – Loch Ailort, Arisaig (**97**) 4.vii.92 – JRL, RMP & MRY

1223 *Pammene splendidulana* (Guen.) – Dinton (**8**) 1992 – SMP

1241 *Cydia compositella* (Fabr.) – Strathy Bay (108) 2.vi.92 – MRY; Askam in Furness (69) 14.vii.92 – N.L. Birkett, *Ent. Rec.* **105**: 44

1242 *C. internana* (Guen.) – Freshwater (**10**) several 18.vii.92 – DHS, PHS & JRL

1249 *C. prunivorana* (Rag.) – Plympton (3) 20, 21 & 27.vi.92 at light – RJH

1255a *C. medicaginis* Kuzn. – Winchester (11) 11 & 17.vi.92 – DHS

1261 *C. pomonella* (Linn.) – Use of pheromone traps – R.C. Dening, *Ent. Rec.* **105**: 196-197

1261a *C. injectiva* (Heinrich) – Peterhead (93) indoors xii.92 – M. Innes; Dronfield, Sheffield (63) in a conservatory early 1982 – per HEB, – K.R. Tuck & MRY, *BJENH* **7**: 1-2

1268 *C. coniferana* (Ratz.) – Sned Wood (36) 8.v.92 pupa in bark of *Pseudotsuga menziesii*, moth bred – RJH, *Ent. Rec.* **105**: 93

1283 *Dichrorampha montanana* (Dup.) – Glen of Aherlow (**H7**) 5.vii.92 – KGMB

1287 *D. aeratana* (P. & M.) – Thurleigh Cutting (**30**) 7.vi.92 – DVM

PYRALIDAE

1289 *Euchromius ocellea* (Haw.) – Portland (9) 19 & 22.ix.92 – R.F. McCormick & Bird Observatory per BFS

1292 *Calamotropha paludella* (Hübn.) – Alice Holt (12) 8.vii.92 – C. Tilbury, *Ent. Gaz.* **44**: 155

1297 *Crambus uliginosellus* Zell. – Kilcolman (**H5**) 20.vi.92 – KGMB, *Irish Nat. J.* **24**(4): 167-168; Bicton Common (**3**) 27.vi.92 – R.J.B. Hoare

1307 *Agriphila latistria* (Haw.) – Takeley (19) 8.viii.92 – DJLA

1315 *Catoptria furcatellus* (Zett.) – Aonach Beag, Ben Alder (97) 2.vii.92 – MRY

1321 *Thisanotia chrysonuchella* (Scop.) – Werrington (32) 29.v.92 – P. Waring, *Ent. Rec.* **105**: 195

1325 *Platytes alpinella* (Hübn.) – Lakenheath (26) 8.vii.92 – BFS

1328 *Schoenobius gigantella* ([D.&S.]) – Werrington (**32**) 30.vi.92 – P. Waring, *Ent. Rec.* **106**: 95

1330 *Donacaula mucronellus* ([D.&S.]) – Newstead Abbey Park (56) 16.vi.92 – K. Cooper

1334 *Scoparia ambigualis* (Treits.) – Lavington (13) 4.x.92, a very late date indicating a probable second generation – BFS

1334a *S. basistrigalis* Knaggs – Flitwick Moor (**30**) 11.vii.92 – DVM

1335 *S. ancipitella* (La Harpe) – Clunes, Spean Bridge (**97**) a few 5.vii.92 – JRL, RMP & MRY

1336 *Eudonia pallida* (Curt.) – Knocknakilla (**H4**) 12.vii.92 – KGMB

1341 *E. lineola* (Curt.) – Greatstone (15) two 16.vii.92 – BFS

1357 *Evergestis extimalis* (Scop.) – L'Ancresse (113) 31.vii.92 – R. Austin per BFS

1361 *Pyrausta aurata* (Scop.) – Larva on *Thymus* – C. Stace, *Ent. Rec.* **104**: 324

1363 *P. ostrinalis* (Hübn.) – Bettyhill (**108**) 4.vi.92 – MRY

1364 *P. sanguinalis* (Linn.) – Port Stewart (H40) 1992 – A.P. Foster, *BJENH* **6**: 60

1368 *Margaritia sticticalis* (Linn.) – Seven records from VCs 1, 9, 15, 18. Full details in list of migrants collated by BFS; Records from Suffolk & Norfolk 1989-91 – M.R. Hall, *Ent. Rec.* **106**: 32

1369 *Uresiphita polygonalis* ([D.&S.]) – Seven records from VCs 1, 9 & 10. Full details in list of migrants collated by BFS

1370 *Sitochroa palealis* ([D.&S.]) – Durlston (9) 30.vii.92 – P. Davey, *BJENH* **6**: 60

1371 *S. verticalis* (Linn.) – Raynes Park (17) 25.vi.92 – MSP

1372 *Paracorsia repandalis* ([D.&S.]) – St. Alban's Head (**9**) 27.ix.92 – P. Davey per BFS

1375 *Ostrinia nubilalis* (Hübn.) – Durlston (9) 17.ix.92 – P. Davey; Fernham (23) 15.viii. & 18.ix.92 – S. Nash, *BJENH* **6**: 62

1380 *Phlyctaenia perlucidalis* (Hübn.) Belham Wood (32) 30.vi.92 – MSP

1382 *Anania verbascalis* ([D.&S.]) – Dungeness (15) 10.vii.92 – MSP

1389 *Udea fulvalis* (Hübn.) – Highcliffe (11) five, 10-19.ix.92 – E.H. Wild, *Ent. Rec.* **10**: 310; further records in list of migrants collated by BFS

1396 *Mecyna flavalis* ([D.&S.]) – Leckford (12) two at light – DHS, Sparsholt (12) one – A.H. Dobson per DHS; Homefield Wood (24) 1992 – M. Albertini per BFS; Wimborne (9) 30.vii.92 – P. Davey per BFS

1408 *Palpita unionalis* (Hübn.) – Newstead Abbey Park (**56**) – K. Cooper det. HEB, and 21 southern records from VCs 1, 9, 10, 15 & 18. Full details in migrant records collated by BFS

1425 *Galleria mellonella* (Linn.) – Forest (113) 26.viii.92 – T.N.D. Peet

1426 *Achroia grisella* (Fabr.) – Sharnbrook (**30**) 14.vii.92 – DVM

1433 *Cryptoblabes bistriga* (Haw.) – Hatfield Forest (19) 30.vi.92 – DJLA

1435 *Acrobasis tumidana* ([D.&S.]) – Six recorded from VCs 9, 13, 15, 113. Full details in list of migrants collated by BFS

1436 *A. repandana* (Fabr.) – Cottingham (**61**) 5.vi.92 – P.A. Crowther, det. HEB; Newstead Abbey Park (56) 7.vii.92 – K. Cooper

1438 *Numonia suavella* (Zinck.) – Spurn (**61**) 29.vii.92 – B.R. Spence per HEB

1447a *Sciota adelphella* (F.v.R.) – Greatstone (15) 8 & 15.vii.92 – B. Banson per BFS, larvae on *Salix alba* 23.viii.92 – BFS; Dungeness (15) 8.vii.92 – S. Clancy; Lydd (15) 10.vii.92 New Romey (15) 18.vii.92 – K. Redshaw per BFS

1449 *Microthrix similella* (Zinck.) – Richmond Park (17) 6.vi.92 – MSP; Hatfield Forest (**19**) 6.vi.92 Churchill (**6**) 6.vii.92 – DJLA; Bucks (24) 1992 – D. Wedd, *BJENH* **6**: 64

1451a *Etiella zinckenella* (Treits.) – Note on second British specimen and its biology – P.M. Potts, *Ent. Rec.* **105**: 140-141; but see also P.E.S. Whalley *A Revision of the genus* Etiella *Zeller, B.M. Bulletin* **28**: 1 (1973)

1454a *Dioryctria schuetzeella* Fuchs – New Forest (**11**) 25.vii.92 – A.J. & C.T. Pickles, *BJENH* **6**: 63; Freshwater (**10**) 14.vii.85 – S.A. Knill-Jones, *Ent. Rec.* **106**: 114

1456 *Epischnia bankesiella* Rich. – Hilsea Point (**3**) 19.ix.92 larvae – RJH

1464 *Gymnancyla canella* ([D.&S.]) – Walton-on-the-Naze (19) 10.vii.92 – B. Goodey

1464a *Zophodia grossulariella* (Hübn.) – Rockland (**28**) 26.v.92 – P.G. Cardy, 2nd British specimen

1465 *Nephopterix angustella* (Hübn.) – Dinton Pastures (22) spinnings on *Euonymus europaeas* 29.ix.92 – R.W. Parfitt per BRB; Hamptead (21) 29.viii.92 – R.A. Softly

1467 *Ancylosis oblitella* (Zell.) – Cockayne Hatley (**30**) 1976 – I. Woiwod per DVM; Leckford (**12**) 21.vii.92 – DHS; Dungeness (15) 7-8.vii.92 – MSP; Swanage (9) 22.v.92 – BFS; Chale Green, I.o.W. (10) 23.vi.92 – S. Colenutt, *BJENH* **6**: 59

1470 *Euzophera pinguis* (Haw.) – Belham Wood (32) 30.vi.92 – MSP

1474 *Ephestia parasitella* (Staud.) – Hatfield Forest (19) 30.vi.92 – DJLA

1477 *E. figulilella* Gregs. – Dungeness (15) 9.x.91 – S.P. Clancy, *BJENH* **6**: 59 & *Ent. Rec.* **106**: 19

1479 *Plodia interpunctella* (Hübn.) – Corby (**32**) 1992, indoors – D.H. Howton

1481 *Homoeosoma sinuella* (Fabr.) – Moor Copse NR (22) 18.vi.92 specimen with suffused forewings – BRB

1485 *Phycitodes maritima* (Tengst.) – Kinlocheil (**97**) 3.vii.92 – JRL

PTEROPHORIDAE

1490 *Oxyptilus parvidactylus* (Haw.) – South Cave (61) 18.vi.92 – D.B. Cutts, det. HEB, confirms nineteenth century, the only previous county record

1491 *O. distans* (Zell.) – Spurn (**61**) 23.viii.92 – B.R. Spence per HEB

1494 *Capperia britanniodactyla* (Gregs.) – Newtonmore (**96**) one 1.vii.92 – KPB,MWH, JRL, ANBS & MRY

1504 *Platyptilia pallidactyla* (Haw.) – Creag Meagaidh NNR (**97**) many 29.vi.92 – MWH, RPK-J, JRL & ANBS

1508 *Stenoptilia bipunctidactyla* (Scop.) – Tulloch Moor (**95**) many 28.vi.92 – KPB, MWH, JRL, ANBS & MRY

1508d*S. islandicus* (Staud.) – Ben Lawers (88) 29.vi.92 – B. Elliott & BFS; Meall nan Tarmachan (88) two 1992 – C. Hart, *BJENH* **6**: 60

1509 *S. pterodactyla* (Linn.) – Tulloch Moor, Grantown-on-Spey (**95**) a few 28.vi.92 – MWH, JRL & ANBS

1510 *Pterophorus tridactyla* (Linn.) – Pegsdon Hills (**30**) 22.vi.92 – DVM

Correction to 1991 list. Data should read:

626 *Biselachista serricornis* (Staint.) – Ormsary, Knapdale, Kintyre (101) 4.vi.92 – MRY

A note on two Vanessid butterflies, 1993-4

I should like to report that, after some six to seven years without a sighting of *Cynthia cardui* L. (Painted Lady) in this district, I at last came upon a fine specimen on a buddleia (3.viii.94) – one of very many planted along the Thames from Charlton Reach towards Greenwich. Passing this bush on my return 20-30 minutes later I found the butterfly still there; it was lively but seemed disinclined to move far. A few days earlier my friend Dudley Collins had seen one in his garden at Carshalton Beeches, Surrey, so these sighting together after several blank years for the species may herald a small invasion – I say "small" because otherwise more would surely have shown up by now (21st August). High summer temperatures over western Europe might be expected to stimulate population growth and migratory activity in a number of Lepidoptera.

I would mention further that last year, 1993, the only three examples of *Vanessa atalanta* (Red Admiral) that presented themselves to me were all seen in the first half of summer – a highly unusual phenomenon in this area. They were in good order, the first two at least; the dates were 1.vi, 5.vi and 5.vii. Of the last, little can be said, being seen only momentarily through a window. My hope that these early sightings might augur a good showing of the species in the autumn was, alas, not fulfilled. The previous year I had noted one *atalanta*, in Charlton Park. This year has produced none up to now.– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

THE CONTINUED DECLINE OF MELANISM IN *BISTON BETULARIA* L. (LEP.: GEOMETRIDAE) IN N.W. KENT

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THIS SUBJECT was first considered in *Ent. Rec.* **100**: 39 and up-dated in *Ent. Rec.* **102**: 175, and a further five years have now elapsed. Table 1 shows the average percentages of the three main forms of *B. betularia* for the years 1970 to 1993 inclusive, in four year periods. Figure 1 illustrates the decline of *carbonaria*.

Table 1

	% *typica*	% *insularia*	% *carbonaria*	**Average sample**
1970–73	14.5	7.5	78	119
1974–77	10.5	13	76.5	107
1978–81	17	11	72	99
1982–85	19	16.5	64.5	102
1986–89	25	21	54	164
1990–93	36.5	31	32.5	119

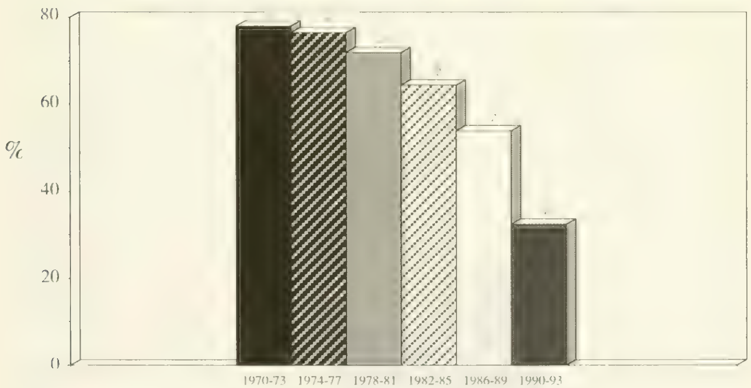

Fig. 1. Percentage *carbonaria* over four-year periods, 1970-1993

The main features of Table 1 indicate:

(a) f. *carbonaria* has decreased from 78% in the 1970-73 period to 32.5% for 1990-93.

(b) f. *typica* has not shown a corresponding increase due to a substantial rise in the numbers of f. *insularia*, this being almost equivalent to that of typical *betularia*. However, subjectivity in determining well-marked *typica* and lightly-marked *insularia* is a complication to be kept in mind.

(c) The decline in f. *carbonaria* during the last four year period has shown further increased acceleration. The percentage increase in the decline of f. *carbonaria* from one four year period to the next is 1.5%, 4.5%, 7.5%, 10.5% (erroneously given as 11.5% in *Ent. Rec.* **102**) and 21.5%.

(d) Over the last period f. *typica* has on average been the commonest form here. Chalmers-Hunt (1981) gives as the first record for Kent of f. *carbonaria* a specimen noted at Lee in 1901, yet in 1907 a series of assembled *betularia* over a period of four nights at Bexley comprised 14 *typica*, 15 *carbonaria*, 3 light intermediates and 4 dark intermediates, Bexley being six miles due east of Lee. This suggests an extremely rapid increase in f. *carbonaria*, and if these figures are representative of the true picture of the incidence of the main forms of the species at that time, it would appear that f. *carbonaria* has been the principal form for over eighty years. The apparent state of parity between f. *typica* and f. *carbonaria* will be seen to be ephemeral when the statistics for the individual years of the 1990-93 period shown in Table 2 are examined. Figure 2 illustrates the changes in *carbonaria*.

Table 2

	% *typica*	% *insularia*	% *carbonaria*	**Yearly sample**
1990	34.6	23.1	42.3	104
1991	27.9	41.2	30.9	165
1992	37.3	29.2	33.5	236
1993	46	31	23	74
Average	36.5	31	32.5	145
1994	42.5	33.75	23.75	80

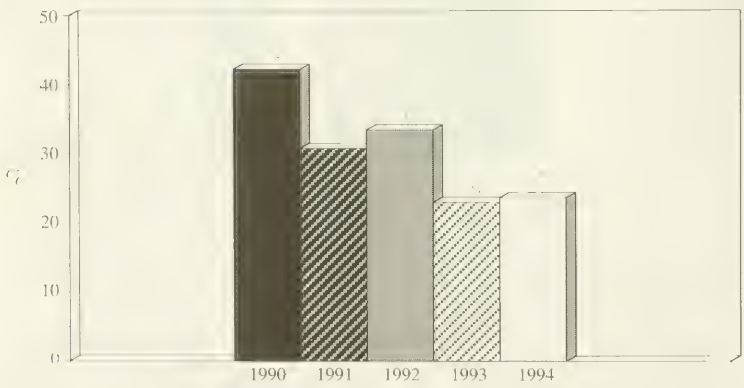

Fig. 2. Percentage *carbonaria* annually, 1990-1994

Table 2 shows the figures for the individual years for the most recent four year period, and also those for 1994. Several features of these are noteworthy:

(a) The irregular pattern present in other four year periods is apparent in the averages for this period also.

(b) For the first time more than 40% of the sample is f. *typica* and less than 25% is f. *carbonaria*, these figures being maintained in 1994.

(c) The aberrant figure for f. *insularia* in 1991 is undoubtedly due to the subjective determination of the lighter forms of f. *insularia* and darker examples of f. *typica*.

(d) The low sample figures for 1993 and 1994 are due to my absence while abroad during the flight period.

(e) The difficulty of differentiating between some specimens of f. *typica* and f. *insularia* rarely arose in 1993 and 1994.

In *Ent. Rec.* **105**: 15 a misprint renders the second sentence of the second paragraph on *B. betularia* nonsensical, the word "*carbonaria*" should read "*insularia*". This is related to the regular occurrence of f. *insularia*, sometimes quite lightly marked, possessing black thorax and body; usually the pigmentation of these conforms with that of the wings. I had understood that such specimens were hybrid *carbonaria* X *insularia*. However, Kettlewell (*The Evolution of Melanism*, 1973) states that "though in 1955 I stated that f. *carbonaria* was epistatic to f. *insularia* we can now say that it is dominant" (p.107), this is later confirmed by the statement that "the true frequency of *insularia* forms is masked by f. *carbonaria* in whose presence it cannot be recognised" (p.134). However, this is followed immediately by the contradictory statement that "The form *carbonaria* is dominant to the majority of *insularia* forms; in one instance it may be epistatic". Plate 9.1 has photographic illustrations of his range of five expressions of *insularia*, and a f. *typica* of which I have never seen the like in north-west Kent, it being so lightly marked. All the specimens have the body and thorax speckled to about the same degree as the wings, and indeed this is usually the case. However, I have seven specimens of f. *insularia* in which the thorax and body are either black, or extremely dark, compared with paler wings; one specimen possesses black thorax and body, yet its wings are lightly speckled. The question – is such nonconformity due to:

(a) the pigmentation of the thorax and abdomen being controlled by different gene(s) to that of the wings? or

(b) such specimens are hybrid *carbonaria* X *insularia* in which *carbonaria* is not completely dominant to *insularia*?

Circumstantial evidence favouring the latter hypothesis is the absence of such individuals in recent years which have been characterised by fewer f. *carbonaria*.

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Athrips rancidella (Herrich-Schäffer) (Lep.: Gelechiidae) in south-west London

On the 23rd August 1993 I recorded a single example of *Athrips rancidella* at Richmond Park, Surrey. The specimen was determined by Dr K. Sattler (BM(NH)). It transpired that this was only the second reported locality for the species in Great Britain, the first being West Wickham, West Kent (VC16) (Chalmers-Hunt, 1985, who illustrates the moth and the genitalia).

During 1994, I have been fortunate to be able to run an m.v. (125 watt) trap in Richmond Park, Surrey (VC17), on a fairly regular basis. On the 15th and 21st July this year I noted a number of small grey gelechiid moths which I should have recognised sooner. It was not until some time later that I realised what they probably were: *Athrips rancidella*, a provisional determination confirmed by Mr K. Tuck (BM(NH)). This is not the end of the story, as I had also noted the same small grey gelechiid in small numbers to an actinic light run at my home address (Raynes Park, also in Surrey) on 7th, 12th and 15th July 1994, about two miles from the Richmond site.

Sokoloff & Chalmers-Hunt (1987) record the foodplant as *Cotoneaster horizontalis*. However, although there is *Cotoneaster* near to the Richmond Park trap site, there does not (rather surprisingly) appear to be any near to the more suburban Raynes Park site. Chalmer-Hunt (1985) reported that *Prunus spinosa* and *Crataegus monogyna* are stated to be foodplants in central and southern Europe. At both the Raynes Park site and the Richmond Park site there are old *C. monogyna* bushes in the near vicinity and it could be possible that these are the sources of the moths at these localities.

I would like to take this opportunity to thank Dr K. Sattler and Mr K. Tuck for help with the identification of this species. I would also like to thank Mr W. Cathcart (Assistant Superintendent, Richmond Park) for organising permission to record insects in the park and to Mr and Mrs W. Cathcart for allowing me to operate a moth trap from their home.

References: Chalmers-Hunt, J.M., 1985. *Monochroa niphognatha* Gozmány, 1953, and *Athrips rancidella* Herrich-Schäffer, 1854 (Lepidoptera: Gelechiidae), new to the British fauna. *Entomologist's Rec. J. Var.* **97**: 20-24; Sokoloff, P.A. & Chalmer-Hunt, J.M., 1987. Notes on the biology of *Athrips rancidella* H.-S. (Lep.: Gelechiidae). *Entomologist's Rec. J. Var.* **99**: 253-254.

– Mark Parsons, 3 Stanton Road, Raynes Park, London SW20 8RL.

THE GENUS *EARIAS* HÜBNER, (1825) (LEPIDOPTERA: NOCTUIDAE) IN BRITAIN AND EUROPE

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THERE HAS RECENTLY been some confusion over the identity of members of this genus in Britain, and this paper is an attempt to sort out the problems of recognition of vagrant *Earias* species which may appear in Britain from time to time.

Fibiger & Hacker (1991) list five European species of *Earias*: *E. clorana* (Linnaeus, 1761), *E. albovenosana* Oberthür, 1917, *E. syriacana* Bartel, 1903, *E. vernana* (Fabricius, 1787) and *E. insulana* (Boisduval, 1833), while omitting *E. biplaga* Walker, 1866, which has certainly turned up in Britain as a vagrant.

Lorimer, in Heath & Emmet (1983) also mentions *E. vittella* (Fabricius, 1794), the larvae of which have been found from time to time in okra pods (*Abelmoschus esculentus*) imported to Heathrow Airport. The imago has not been seen at large in this country, or indeed in Europe.

Earias albovenosana is a native of Algeria and in Europe has only been reported from Sicily; *E. syriacana* was described from Syria; in Europe there is a single record from Albania (Heinicke, 1965). Neither need concern us here. The only native British species is *E. clorana*, the Cream-bordered Green Pea, which is local but sometimes common in southern and eastern England, and is also found in one locality in Co. Cork, Ireland (Skinner, 1984). Abroad, it extends from southern Scandinavia and Finland through central and western Europe to Italy, and eastwards to Asia Minor and western Siberia. *E. vernana* occurs in Denmark and the southern tip of Sweden, and extends locally through the Netherlands and western Germany to Austria, Czechoslovakia and Hungary, and to southern France and eastwards to Uralsk, Russia (Skou, 1991). The writer has recently discovered it in Prov. Huesca, Spain, thus confirming its presence in that country. It is associated with white poplar (*Populus alba*) and just possibly could be found in Britain. *E. insulana* and *E. biplaga* are chiefly African species, pests of cotton (*Gossypium*), but *E. insulana* is fairly widespread and apparently native in Spain, as well as the Canary Isles (Calle, 1983), and presumably has some other foodplant. Both have been recorded as vagrants in England. *E. vittella* is a widespread tropical species: there are specimens in the British Museum (Natural History) from Africa, India, Formosa, Australia and some of the Pacific islands.

Mr S.A. Knill-Jones (1993) reported a specimen of *E. insulana* taken at Freshwater, Isle of Wight, on 25th June 1992, and referred to another taken at St Austell, Cornwall, twelve days earlier on 12th June, stating that these were the third and fourth British records. When I saw Mr Knill-Jones' specimen in his cabinet, I was immediately suspicious that it was but a faded

and perhaps discoloured *E. clorana*. He very kindly allowed me to take it away and dissect it, and it proved to be a male *E. clorana*. The St Austell specimen was exhibited at the Annual Exhibition of the British Entomological and Natural History Society in 1992 and its photograph was subsequently published in the Society's Journal (1993). It appears to be practically identical to the Freshwater specimen. Both specimens have brown fringes, and this appears to be the source of confusion.

Lorimer, *in* Heath & Emmet (1983) got the descriptions of *Earias* species about right, although the illustrations are crude; Skinner (1984) is understandably dismissive of both *E. biplaga* and *E. insulana*. He says nothing about wing-shape, distinguishing *E. clorana* from the others on the presence of the white-edged costa of the forewing, and stating that *E. biplaga* has a *narrower* forewing than *E. insulana* (it should be the other way round), and that *E. insulana* has a dark brown fringe, whereas that of *E. biplaga* is pale (this, too, is the wrong way round). He illustrates *E. insulana* correctly from foreign material, but omits *E. biplaga*. Seitz (1914) refers to *E. clorana* ab. *flavimargo* de Joannis from Britany (*sic.*) in which the fringe is yellowish at the base, brown in the middle and white at the tips. The existence of this form appears to have been overlooked by British entomologists, and the presence of a brown fringe in recent specimens recorded as *E. insulana* seems to have been the single cause of mistaken identity.

In reality, the four species under discussion are easily identified without recourse to examination of genitalia, but figures of male and female genital structures are given here for the sake of completeness, and because these have been utilised in preparing this paper.

Earias clorana. Wingspan 18-24mm. Frons white, palpi and antennae purplish-brown, collar green-scaled.

Thorax rich pea-green in fresh specimens, with some white scaling on patagium.

Forewing rather broad, costa strongly arched, apex pointed; termen rounded; dorsum straight, narrowing sharply towards base of wing, with a weak and inconspicuous flat bulge about one third distance from base. Colour rich pea-green, very finely irrorate darker green, without any trace of cross-lines. Pure white costal stripe broader in basal half, tapering to wing-tip; costal margin brownish-green in basal one fifth. Termen slightly darker green, fringe whitish with some green cilia. Hindwing silky white with very fine green terminal line and slight greenish tinge to cilia in anterior third of wing. Underside of forewing greenish-white, central area smoky, that of hindwing white.

Abdomen greenish-white.

Although the green pigment appears to be stable, worn specimens do not always show the details described above from bred specimens. The sexes are not easy to distinguish at a glance, but the female is often a little larger and

the abdomen slightly more robust and more rounded at the tip. British populations are apparently invariable apart from size. The two specimens recently reported as *E. insulana* agree with the description and illustration of *E. clorana* ab. *flavimargo* de Joannis, 1908, and are very likely to have been immigrants from mainland Europe.

E. vernana is of similar size to *E. clorana* but the wings are even broader, and the bulge on dorsum of forewing is extremely weak and inconspicuous. Head, collar and patagium pure white, rest of thorax white with scattering of green scales.

Forewing silvery white, with irroration of slightly yellowish-green scales, the termen darker green and with distinct green discal dot and two narrow cross-lines, the inner zig-zagged, the outer curved. Edge of costa and fringe white. Hindwing less pure white than in *E. clorana*, often with darker veins. Fringe white, with admixture of green cilia in anterior third. Underside similar to that of *E. clorana*. The intensity of the crosslines varies, and in ab. *obliterata* Warren, 1913, all the markings are absent.

E. insulana Wingspan 24-28mm. The body is more robust than in either of the two species mentioned above, and the wings are longer and narrower, giving the species a completely different look. Head greenish or brownish white. Palpi more slender than in the other species, light brown with whitish tips; antennae light brown. Thorax apple green or yellowish-buff.

Forewing costa straight except for weak curve at base and towards apex, diverging only slightly from dorsum. Apex blunt, termen weakly curved. Dorsum straight with distinct bulge near base, into which it narrows. Forewing colour yellowish apple-green or yellowish-buff, in green specimens with broad cream coloured dorsal streak. All colour forms show three narrow crosslines and often a dark discal dot. Antemedian line placed well out towards the middle of wing, all three extending obliquely to dorsum. In some specimens, there is a dark-coloured patch between antemedian and postmedian lines, which extends from discal spot to dorsum. Fringe yellowish or brownish. Hindwing silky white with very narrow brown terminal line more strongly developed anteriorly. Fringe white, tinged brown anteriorly. Underside of forewing whitish or wholly smoky, fringe pale greenish or yellowish, never brown as in *E. biplaga*.

E. insulana is evidently a variable species. The writer has taken yellowish buff specimens, in apparently mint condition, in southern Spain, and green ones taken in the same region have shown no sign of fading in the cabinet.

E. biplaga has similar wingspan to *E. clorana*, but the wings are a little less broad, costa variably curved, termen less oblique so that apex is nearly a right angle; tornus rounded; dorsum straight with weak prominence, consisting of a tuft of enlarged scales, just over one third distance from base, where dorsum is distinctly angled, not curved, into base of wing.

Head and thorax bright golden yellow or greenish yellow; palpi adorned with purplish-brown scales.

Forewing pale, bright apple-green, yellowish to bright golden-yellow, or orange, with scattering of white scales, often with strong golden-yellow suffusion in basal half only. There are very faint traces of strongly crenate cross-lines, apparently more strongly developed in the yellow forms, which may also show a small, dark discal spot; the cross-lines, when present, are less oblique than in *E. insulana*; one common form has a dark blotch like a thumb-print extending obliquely from dorsum to the cell. Through a lens, this mark is seen to consist of a mixture of dark purplish-brown scales and white ones. It is quite a different structure from the similarly-positioned patch in some forms of *E. insulana*, in which the patch consists of an even irroration of dark scales over the ground colour, and is always edged by darker antemedian and postmedian lines. Fringe basally yellow, distally whitish, with strong admixture of dark purplish-brown cilia, evenly spread from apex to tornus, making the whole fringe appear dark brown. Hindwing silky white, with very fine, dark terminal line. Fringe tinted purplish-brown in anterior half. Underside of forewing glossy yellowish-white, with contrasting dark fringe. That of hindwing whiter.

E. biplaga is a very variable species, but the dark-coloured fringe on the forewing, present on both upper and underside, appears to be a constant feature. One specimen in the British Museum Collection, British Museum Slide Noctuidae No. 15236, has a strong resemblance to *E. clorana*, having the forewing green with whitish costa; both costa and fringe are, however, tinted with brown, and it is indeed a female *E. biplaga* (det. M. Honey).

Should the imago of *E. vittella* ever appear in Britain, it would be instantly recognisable. It is about the same size as *E. clorana*, with slightly narrower wings. In the forewing, the costal and dorsal thirds are cream coloured, and the median third green from termen, gradually tapering to the base of the wing; fringe yellowish-brown. Hindwings white, termen often tinged brown; fringe white. There is also a form in which green is replaced by light brown.

Genitalia

Male. Uncus divided, with two spine-like points; costa produced to a point; cucullus in the form of a bristly pad bearing an articulated spine; aedeagus slender. Interspecific differences are found in the degree of development of the uncus points, in the width of the harpes and especially in the shape of the margin, and in the size and spininess of the cucullus.

E. clorana Harpes relatively broad, margin rounded; cucullus moderately bristly, articulated spine weakly curved. (Fig. 1)

E. vernana Harpes with distinct angle at margin; cucullus weakly bristly, articulated spine weakly curved. (Fig. 2)

E. insulana Harpes strongly excavate at margin; cucullus heavily bristled, articulated spine nearly straight. (Fig. 3)

E. biplaga Harpes sharply right-angled at margin; cucullus moderately bristly, articulated spine sickle-shaped. (Fig. 4)

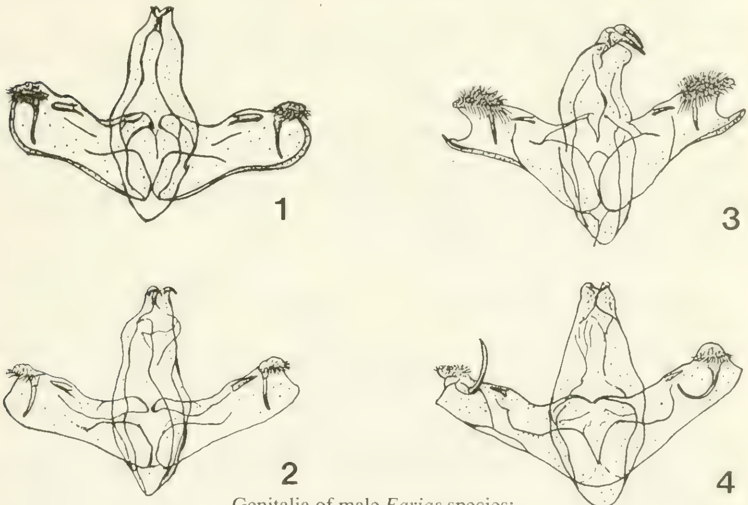
Female. Corpus bursae ovoid, with strong longitudinal striae; ductus bursae very slender, ostium a mere pore with weak sclerotisation posteriorly. Interspecific differences mainly in ratio of length to width of corpus bursae (l/w) and length of corpus to length of ductus (b/d).

E. clorana Corpus bursae rugby-ball shaped: l/w = 2.7; b/d = 1.35 (Fig. 5).

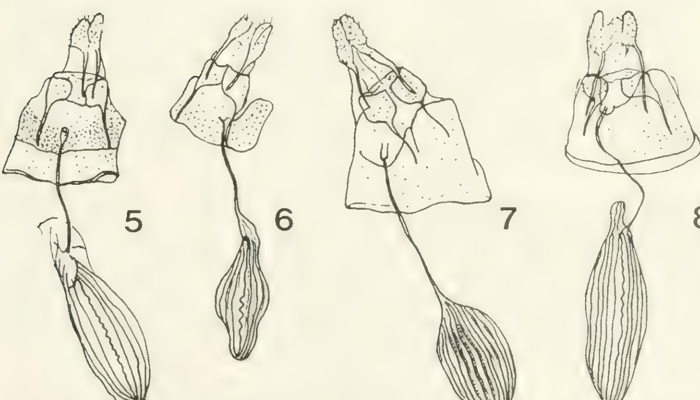
E. vernana Corpus bursae lemon-shaped: l/w = 2.3; b/d = 1.50 (Fig. 6).

E. insulana Corpus bursae broadly ovoid: l/w = 1.75; b/d = 0.76 (Fig. 7).

E. biplaga Corpus bursae narrowly ovoid: l/w = 3.08; b/d = 1.14 (Fig. 8).



Genitalia of male *Earias* species:
1. clorana 2. vernana 3. insulana 4. biplaga



Genitalia of female *Earias* species:
5. clorana 6. vernana 7. insulana 8. biplaga

Genitalia figures

Earias clorana male. ENGLAND: Walberswick, Suffolk, 12.v.1969. BG. Slide No. 292 (Fig. 1).

Earias clorana female. SWITZERLAND: Pfynwald, Valais, 27.v.1987. BG. Slide No. 397 (Fig. 5).

Earias vernana male. SPAIN: 2km W. Ontineña, Huesca, 24.v.1991. BG. Slide No. 394 (Fig. 2).

Earias vernana female. DENMARK: ex larva Asserbo, NEZ. UC11. 3.viii.1973. M. Fibiger. Slide No. 395 (Fig. 6).

Earias insulana male. SPAIN: 9km S. Fortuna, Murcia, 16.x.1993. BG. Slide No. 398 (Fig. 3).

Earias insulana female. BOTSWANA: (815) R. Ihamalakane, 7mls N.E. Maun, 20.iv.1972. South African Exp. B.M. 1972 – Slide No. 399 (Fig. 7).

Earias biplaga male. NIGERIA: N.W. State, Mokwa, Nr. Cattle Ranch, 9-10.viii.1970. P.H. Ward. B.M. 1970 – 604. Slide No. 400 (Fig. 4).

Earias biplaga female. NIGERIA: Samaru, 8-15.ix.1970. P.H. Ward. B.M. 1970 – 604. Slide No. 401 (Fig. 8).

Reported occurrences of *Earias insulana* and *E. biplaga* in Britain

E. insulana

1. "Southern England", 1962, by B. Wurzell. Correctly identified.
2. Brockenhurst, Hampshire, 8.x.1967 (Gardner, 1968). RCK Collection, BM 1976– 688. Correctly identified.
3. St. Austell, Cornwall, 12.vi.1992, by W. Kittle (West, 1993). Misidentified.
4. Freshwater, Isle of Wight, 25.vi.1992 (Knill-Jones, 1993). Misidentified.

E. biplaga

1. Buckingham Palace Gardens, London, 16.vii.1964 (Bradley & Mere, 1964). RCK Collection, BM 1987–58 det. W.H.T. Tams. Correctly identified.
2. Lymington, Hampshire, 23.vii.1982 (Pickles, 1983). Correctly identified.

Acknowledgements

The author is grateful for the co-operation of Messrs Kittle, Knill-Jones, Pickles, Spalding and Wurzell in sorting out the correct identities of the specimens in question. The Trustees of the National History Museum (BMNH) are thanked for their kindness in allowing access to material in their Collections, and the particular assistance received from Mr D. Carter and Mr M. Honey is warmly welcomed.

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A note on A.J. Wightman

The essay on the *Hazards of Moth Collecting* by the late A.J. Wightman and the splendid introduction by the Editor in the last issue brought memories flooding back of the enjoyable times spent with A.J. Wightman on collecting trips over several years.

Two trips stand out in my mind, the first to Freshwater in the Isle of Wight to collect larvae of the pale form of *Eumichtis lichenea* which Archie knew occurred on the cliffs at this locality. I collected him from his house in Pulborough and drove to Portsmouth where we left the car in a garage and took the ferry to Ryde. Here we boarded a Vectis Bus to travel the length of the island to Freshwater. We carried our collecting gear on the top deck of the bus. Archie's loud and penetrating voice seemed to reverberate throughout both decks and several passengers came up the steps to get a close look at the peculiar old man.

Archie had previously booked our overnight beds with a lady in the village where he had obviously stayed before.

At dusk we proceeded to the cliffs and quickly found plenty of larvae sitting around and each of us bagged a number of full grown caterpillars. I have a block of 18 perfect moths in drawer number 22 in my 48 drawer Noctuid cabinet. They are almost white and so distinct from specimens from other localities.

The second trip was more local, sugaring on the South Downs near the Opera House at Glyndbourne. A footpath climbs the Downs with a row of posts nearly all the way to the summit where there were many more posts. It was a fairly steep climb which I would not wish to tackle today. We were sugaring for the southern form of *Aporophyla lutulenta* the Deep-brown

Dart. Archie had specialised in the Scottish forms, *luneburgensis* and had a wonderful range in his collection.

Paul Sokoloff mentions in his introduction that Wightman was a physically large man. That is being modest, he was several inches taller than me, I was 6'1½" and he must have weighed almost twice my weight of 14 stone plus.

When collecting in these out of the way places with him, I constantly had an awful feeling that if he fell while climbing difficult ascents and broke a limb what should I do?

I could not possibly lift him or help him to a civilised area. There would be no other way than to go for help miles away. Fortunately nothing untoward occurred on our many collecting trips.

Several collectors were staying in a Hotel near Wicken Fen, some years ago. The floor in the entrance hall was highly polished and when A.J.W. entered and placed his foot on the door mat it slid away and Archie banged the back of his head on the sill. A large lump developed on the back of his head and when I said he would develop a bad headache, he replied "Not me, I've never had a headache in my life".

During 1969-70 I helped to form a new Rotary Club in Midhurst and Petworth which involved weekly meetings at Midhurst. As I passed Wightman's house *en route* I called to see him for a chat fairly regularly. He told me about the number of cases that had been selected for the Rothschild–Cockayne–Kettlewell Collection and that the rest of his collection would go to Gerry Haggett. He gave me the travelling setting case that he had constructed for his trips to Cork to search for the almost black specimens of the Marbled Green on the walls around the city.

Archie was a wonderful character, so knowledgeable on so many subjects. I wish I could have taped our conversation on those pleasant evenings spent together.

He was also an avid writer of letters. I have a large number received from him over the years. I must read them again, perhaps some could be published.– RON DYSON, 3 Overhill Gardens, Brighton BN1 8ND.

Chestnut-coloured Carpets (*Thera cognata* (Thunb.)) (Lep.: Geometridae) in Yorkshire

P. Corkhill recorded an example from Austwick on 7/8th July 1992 (*Ent. Rec.* **105**: 74).

In 1992, G.B. Summers recognised a moth he had previously taken at Levisham from my series of *cognata*. We confirmed this identification. This capture was reported by S.M. Jackson (*Ent. Rec.* **105**: 176), but the date of capture was 28th July 1990, not 1992, the year it was identified.

Therefore, the Levisham record pre-dates the Austwick record as the first Yorkshire record.– M.R. BRITTON, 38 Meadlands, York YO3 0PB.

ISCHNOGLOSSA TURCICA WUNDERLE (COL.: STAPHYLINIDAE) IN BRITAIN

J.A. Owen

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I. TURCICA is close to *I. prolixa* (Gravenhorst) from which it was only recently separated (Wunderle, 1992). Following the discovery of a few examples of this species among specimens of *I. prolixa* in the author's collection (Owen, 1994), material from a number of collections has been examined and further British examples identified. This has allowed an assessment of means of separating the two species and provided a provisional picture of their distributions in Britain.

In appearance, *I. turcica* closely resembles *I. prolixa* to which it runs down in the keys of Fowler (1887), Joy (1932) and Lohse (1974). The most easily used distinguishing features appear to be:

1. the punctures on the upper surface of the head, which are very fine and six or more diameters apart in *turcica* but larger and four or less diameters apart in *prolixa*;
2. the punctures on the elytra, which are moderately fine on a more or less smooth surface in *turcica* but coarse and asperate in *prolixa*; and
3. the punctures on the rear portions of abdominal tergites, which are moderate and diffuse in *turcica* but close and strong in *prolixa*.

There are also clear cut differences in the genitalia (see fig. 1). The basic shape of the aedeagus is similar in the two species but that of *turcica* is consistently shorter than that of *prolixa*. Thus the distance from the base to the tip of the central lobe measured 0.43 – 0.45mm in *turcica* and 0.50 0.53mm in *prolixa*. Wunderle (1990, 1992) gives values of 0.42mm and 0.50mm respectively. The spermatheca in *turcica* has a similar contorted shape to that of *prolixa* but is more slender and shorter. The lengths in specimens examined by the author were 0.25 – 0.28mm in *turcica* and 0.30 0.35mm in *prolixa*. Wunderle gives corresponding values of 0.24 and 0.28 – 0.33mm respectively.

Wunderle (1992) gives the smaller body length in *turcica* as a distinguishing feature, giving values of 2.5 – 2.6mm and 2.7 – 3.2mm respectively. Certainly, most specimens of *turcica* are smaller than specimens of *prolixa* but the problem of determining accurately the lengths of small Staphylinids, so often with retracted abdomens, makes length unreliable as a means of separating the two species. Wunderle also gives the structure of the antennae as a means of separating the two species but the differences are only likely to be discernible in specimens in which the antennae have been very carefully displayed.

Records from material examined by the author (37 specimens) or by Mr A.A. Allen (14 specimens) indicate that, in Britain, *turcica* (33 specimens) is a southern insect (fig. 2). Vice-county records, with collectors' initials in

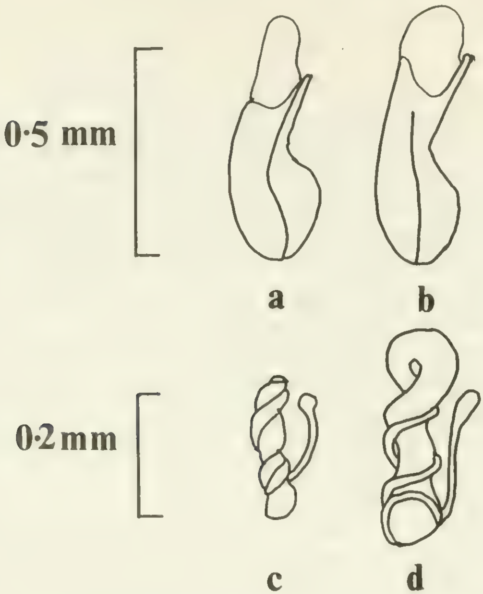

Fig. 1. Genitalia: lateral view of aedeagus
a. *turcica* and **b.** *prolixia*; spermathaca – **c.** *turcica* and **d.** *prolixa*.

parentheses (see acknowledgements) were from South Devon (G.A.), South Hants (H.L.), North Hants (P.H.), East Sussex (P.J.H.), West Kent (A.A., N.H., P.J.H., A.W.), Surrey (A.A., H.L., J.O., A.W.), Berkshire (A.A., J.O., P.H.) and Worcester (P.W.). Most of these records are for the period 1940 to 1990 but two of Harwood's specimens (in coll. A.A.A.) were collected in 1905. Outside Britain, *turcica* is known from the Mediterranean area as far east as Turkey (Wunderle, *in litt.*). The occurrence of a beetle species in Britain and in the Mediterranean area but not apparently in central Europe is unusual but by no means unknown.

In contrast, *prolixa* in Britain appears to be more a northerly insect (fig. 2). Mr Allen has taken a single specimen at Blackheath, West Kent but otherwise all specimens examined were from vice-counties north of the Thames, viz. Herts (P.H.), West Suffolk (A.W.), East Norfolk (H.L.), East Gloucester (P.W.), Cardigan (J.O.), Roxburgh (M.S.), Mid Perth (J.O., P.H.), Elgin (J.O., G.A.), Westerness (J.O.), North Ebudes (J.O.) and West Sutherland (I.W.). Outside Britain, *prolixa* ranges across most of the rest of Europe (Wunderle, 1990).

As far as ecology goes, *turcica* in Britain has been recorded in and association usually with broad-leaved trees such as beech, birch and oak but sometimes with pine, occurring, as a rule, singly under the bark of dead

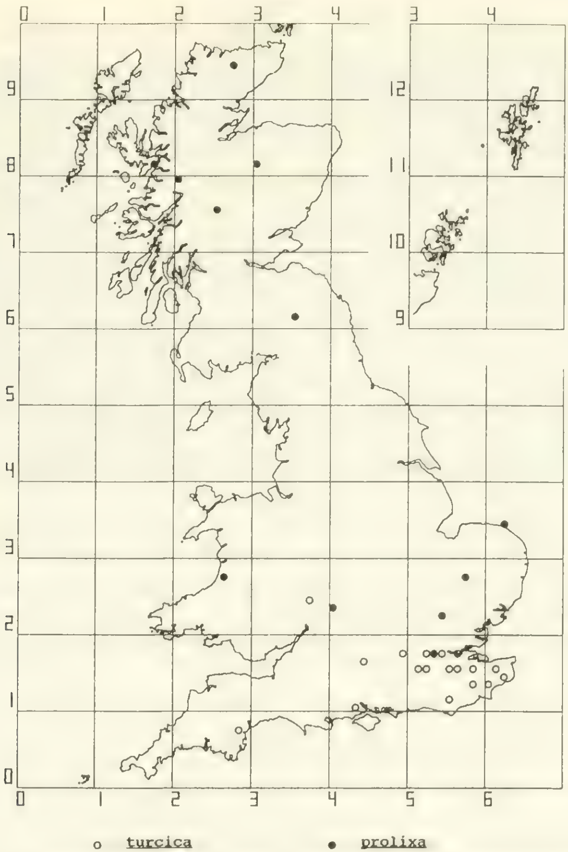

Fig. 2. Geographical distribution of specimens examined in terms of 10km squares.

trunks and branches or in rotten wood. One of the author's specimens was taken in a flight interception trap in a deciduous wood. Dates of records ranged from March to October. *I. prolixa* occurs in similar habitats. Records for specimens examined had dates ranging from January to November.

It is of some interest that *I. turcica* should turn up in Britian for Lott (1993) has shown that another recently described species – *I. obscura* (Wunderle, 1990) – also occurs here. The two appear to be difficult to separate on external characters but differ in the size and shape of the genitalia. None of the specimens examined by the author could be referred to *obscura*. There is, however, no doubt that both species have a place on the British list for British specimens of both species have been confirmed by Herr Wunderle.

Acknowledgements

I am much indebted to Herr Wunderle for the initial identification of my specimens as *I. turcica* and for providing information on the species, to Mr A.A. Allen who very kindly checked *Ischnoglossa* specimens in his possession, collected by himself, by the late G.H. Ashe or by the late P. Harwood and to Mr Derek Lott for information on his *obscura* specimens. I thank also the following colleagues for giving me material or for letting me examine material in their possession: Mr J. Cooter (specimens from the H.R. Last collection now in his care), Mr Norman Heal, Mr Peter J. Hodge, Mr Magnus Sinclair, Dr Ian White, Mr Paul Whitehead, Mr Alex Williams. I thank also Mr A.R. Wiseman for authorising access to Windsor Forest and English Nature for arranging this.

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– , 1992. Eine neue Art der Gattung *Ischnoglossa* Kraatz 1856 aus Türkie (Coleoptera, Staphylinidae, Aleocharinae). *Entomol. Blätter,* **88**: 49-52.

Hazards of butterfly collecting – "Les Papillons de Zaire". October, 1989

In 1981 was published the first ever book on the 1,600 of so butterflies of Zaïre, one of the best ever published on any part of Africa – unfortunately lacking the Skippers, though the author is a specialist in these. It was written by Lucien Berger, one of the leading authorities on African butterflies, and is copiously illustrated in colour. It is a must for the library of anyone who might even expect to become mildly interested in Africa's fascinating butterflies. I obviously have a copy in my library – but precious few of my colleagues do. Why not?

As far as I know all copies now available, bar my own, stem from the limited stock of review and author's copies that Berger received directly from the printers before the bulk was sent to Zaïre. The rest are still with the publisher, the "Présidence de la République", in Kinshasa. This is, of course,

Looking for *Papillons de Zaïre*. Somewhere in Zaïre.

shorthand for His Excellency, Field-Marshal, Mobuto Sese Seko etc. – he of the "Mouvement populaire pour la République" (one country, one people, one party, and – wags add – one bank-account). There is no libel here – a World Bank official once called Zaïre the world's only fully institutionalised "kleptocracy".

During my first visit to Kinshasa in 1987, I tried all the tricks in my book to coax a copy out of the Presidency, or to find one that had "accidentally" reached a book-shop. No luck. No book-shops had it, even ex-ministers could not lay hands on a copy (there are lots of ex-ministers in Kinshasa, since the appointment and sacking of ministers is one of Mobuto's main ways of staying in power). My final port of call was the book-shop in the Kinshasa Intercontinental Hotel. I left my calling-card with promises of gold were a copy to be procured before my next visit.

My need of the book increased, but a visit to Kinshasa in 1988 gave the same result: No book for love or money – even though money often goes a long way in Zaïre. I went down to the Intercontinental to renew my promise of a reward – it was unnecessary, I was immediately recognised – "ah, c'est vouz avec les papillons!"

In 1989 I had almost given up, but during a brief visit I once again went to the Intercontinental. No book . . . but another customer overheard our conversation. "Oh" he said, "I just saw a copy at the International Fair – it's closing today, by the way".

I commandeered a car from my hosts and rushed to fairgrounds, where signs of packing were evident, and sure enough, in the section on our

"glorious heritage" was a copy of THE book. A seedy-looking gentleman from the Ministry of National Heritage was in charge: "Could I buy the Book?".

"Unfortunately not", it was the Ministry's only copy.

"Where could I buy it?"

"Pas possible".

Then I did it! I had sworn I never would! During thirty years of travel in the most difficult parts of the world, I never have! I still feel ambivalent about having done it!

I unrolled a hundred dollar bill and dangled it in front of the heritage gentleman. It was promptly seized, and the book was mine. It being Kinshasa, the proverbial brown paper bag was not available, so I carried off my loot in broad daylight. I promise I will never do it again. But, honestly, the book is now in nearly daily use with me, and the Ministry of National Heritage has even less business than they did then. Was I really morally wrong in what I did? I think there is a UK television programme dealing with this kind of ethical dilemma; I have not been brave enough to apply for a slot.

This ridiculous situation is almost the complete opposite of the usual one. Normally, researchers and consultants descend on an unsuspecting developing country and write their books, papers, and reports. These are then widely circulated to academics in the rich countries and to aid agencies, but not to those who really need them – local people batting against all odds with research and development problems with very little of this information available, and for whom a few dollars-worth of photocopies would break their budgets.– T.B. Larsen, 358 Coldharbour Road, London SW9 8PL.

The voltinism of *Acleris schalleriana* (Linnaeus) (Lep.: Tortricidae)

The 19th century authors (Wilkinson, 1859; Stainton, 1859; Morris, 1872), who called this moth *Peronea tristana* (Hübner), described it as single-brooded, flying from August or September until November. Tutt (1902), to whom it was *P. logiana* (Clerck), gave the larval period as June to August, but later (Tutt, 1905) added that larvae could still be found up to the end of September. He did not suggest the possibility of more than one generation. Meyrick ([1928]) gave the same dates for the emergence of the adults as the Victorian writers, but added that they overwintered until May. Ford (1949), Bradley, Tremewan & Smith (1973) and Fairclough *in* Emmet ([1979]) repeated Meyrick's figures. Hancock *in* Emmet (1988) seems to have been the first to suggest that the species was bivoltine, giving the dates for the imago as August to September, and October to May.

On 28th June 1994 I took a specimen at m.v. light in Saffron Walden, Essex. Because of the early date, I consulted the specimens, all reared, in my collection; their high number is because the species is polymorphic. I found that I had five from Trottiscliffe, Kent, that emerged between 22nd and 26th

June, 1969, and three from the Burren, Co. Clare, that emerged on 17th and 18th July, 1971. The date of emergence of 25 others ranged from 1st September to 4th November.

A possible explanation is that this is one of the species that is essentially univoltine, but has a proportion of larvae that feed up quickly and produce adults from late June until August. The remainder develop slowly and the moths emerge from September onwards. A similar habit causes conflicting opinions over the voltinism of certain leaf-miners. The best-known example of this adapation is afforded by the Comma butterfly (*Polygonia c-album* (Linnaeus)).

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– A.M. Emmet, 14 Victoria Gardens, Saffron Walden, Essex CB11 3AF.

Phyllodrepoidea crenata (Grav.) (Col.: Staphylinidae) in South Northumberland

Among the duplicates and unsorted material that came to me (indirectly) from the late G.H. Ashe I found a series of five examples of this scarce northern beetle, taken not by him but apparently by a correspondent of the late Joseph Cribb. The locality is given as Dipton Fort, near Riding Mill on the river Tyne a few miles south-east of Hexham, south Northumberland; the date, 30.i.1930. This is well within the distribution of the species as now known, but, as the records are probably somewhat few, one more may perhaps not be superfluous. There is no indication of habitat, which, like that of the allied *Deliphrum tectum* (Payk.), appears remarkably diverse.

– A.A. Allen, 49 Montcalm Road, Charlton, London SE7 8QG.

Some recent sightings of *Argynnis adippe* (Denis & Schiffermüller) (Lep.: Nymphalidae) from West Devon

Argynnis adippe (High Brown Fritillary) has declined dramatically in recent years, although some quite strong colonies still persist here in Devon. I would like to record a number of recent sightings from my home at Tuckermarsh, in the parish of Bere Ferrers, Devon (VC3).

My main reason for this note is that, although these sightings were conveyed to the County butterfly recorder, they do not appear in the recently published text *Devon Butterflies* (Bristow, Mitchell and Bolton, 1993). The

first, a worn male, was observed nectaring on Corncockle (*Agrostemma githago*) on 4.viii.91. In the following year a fresh female was seen on 10.vii.92, sunning itself on our Leylandii hedge at 7.05pm. Two further examples were noted on 12.vii.92 and 19.vii.92, flying in the company of numerous other species on drifts of Creeping Thistle (*Cirsium arvense*). None were seen in 1993, although this was a very poor year here and many of the more common species failed to appear.

It is unlikely that this insect breeds on our property (although around twenty butterfly species do or have) but much of the surrounding countryside affords an ideal habitat: small, warm sunny meadows and banks, fringed with bracken and with abundant violets (*Viola* spp.). There are records of *A. adippe* dating back to the late 1960s from Bere Ferrers parish and it seems probable that a small population survives in this area.– ROBERT BOGUE, Kingston House, Tuckermarsh, Bere Alston, Devon PL20 7HB.

A sighting of the Monarch butterfly, *Danaus plexippus* L. in Kent

A fine specimen of the Monarch butterfly was observed by Mike Keen on the afternoon of 25th July 1994 at Beckenham, Kent. The insect was observed for several minutes during which time it fed briefly on a spray of Buddleia. The origin of the butterfly is unknown, but there are no butterfly farms in the vicinity from which it could have escaped. PAUL SOKOLOFF, 4 Steep Close, Orpington, Kent BT6 6DR.

Thaumetopoea herculeana (Rambur, 1837), an unusual member of the Thaumetopoeidae (Lepidoptera)

Of the four species present in Spain belonging to the Thaumetopoeidae, *T. herculeana* is the only member whose larvae feed on low plants. In addition and more importantly in terms of the nuisance value of the family the larvae of this species are not at all urticating.

In February 1990 whilst passing through San Fernando (Cádiz) on my slow journey back to Madrid I was intrigued to see so many larvae of this moth crawling over the *Erodium* plants, which along with *Malva*, cover wasteground. The latter plants play host to the Arctiid, *Ocnogyna baetica* (Rambur, 1836). The larvae looking so much like *Automeris* assume the "habit" so curious of this family's larvae that they crawl from one plant to the next end-to-end procession-like.

I made the mistake of collecting a few larvae as I was confident they would accept *Cistus* back in London. As it was they were very fussy and although attempts were made at feeding they did not take to the change. This is even more surprising given that *Cistum salviaefolius* is listed as a foodplant along with the *Erodiums*; *E. moschatum* and *arborescens* plus *Helianthemum vulgare* and *H. croceum* (Gómez Bustillo, 1978).

Fortunately, on returning to Madrid at the end of February 1990 the surviving larvae happily reverted back to *Erodium*. One larva in fact pupated on 17th March in peat.

The next time I came across the larvae was in Valdemoro, south of Madrid in April of the same year, this time feeding on *Helianthemum*, especially on those plants growing on slopes exposed to the sun so vital to the larvae's development. Larvae were taken and did much better than the first batch probably because they were reared in a light airy cage on potted plant. They began to go under on 23rd April. A check on these larvae revealed that they were still "pre-pupae" on 9th May.

The imagines emerge at different times of the year in Spain depending on the area (Gómez Bustillo, 1978). They emerge in June in the north (Castilla León) and centre (Madrid, Guadalajara, Cuenca), whilst in Andalusia the moths come out in September and October. One assumes that this is so due to the intense summer heat of the south and that the moths only emerge once the autumn rains encourage the growth once again of the larval foodplant.

Of the fifteen cocoons in my possession, moths began to eclose in late August, with the first pair emerging together on 23rd August. The imagines do not live long at all, so it seemed that for any copulation to take place it is imperative that emergences are simultaneous. Although no moths were noted *in cop* a large batch of ova covered in anal hairs was found on 25th August. There were other emergences until 21st September but no pairings occurred.

Larvae hatching out on 25th September were transferred to potted *Helianthemum* and kept in a sunny window. The larvae spun a web amongst the lower part of the plant on 7th October, the usual procedure during the earlier instars; this protection is dispensed with once the larvae are more advanced, the larvae then feeding *en masse* with no cover whatsoever. In the wild they feed throughout the winter months principally in sunny weather, pupating in April.

The moth is distributed in the central, north-central and southern provinces of Spain; the southern-most parts of Galicia (north-west Spain) and northern Portugal. Outside Iberia it is found in Morocco, Algeria, Tunisia, Libya and eastwards towards Palestine.

References: Gómez de Aizpúrua, Carlos, 1986. *Biología y Morfología de las Orugas*. Vol. II; Gómez Bustillo, Miguel R., 1981. *Catálogo Sistemático de Lepidópteros Ibéricos;* Gómez Bustillo, Miguel R., 1978. *Mariposas de la Península Ibérica, Heteróceros* II; Rougeot, P.C. & Viette, P., 1980. *Guía de Campo de las Mariposas Nocturnas de Europa y Norte de África*.

G. King, 20 Turnstone Close, London E13 0HN.

Dyschirius angustatus (Ahr.) (Col.: Carabidae): earlier Scottish finds

R.M. Lyszkowski, J.A. Owen and M. Sinclair (1994, *Coleopterist* 3(1): 22) give a full account of the more recent finds of this rare *Dyschirius* in Scotland and northern England. When at Aviemore in 1938 I took, on 18.vii. a single specimen in that district running on damp sand by the river Druie, an offshoot of the Spey, in which *Bledius subterraneus* Er. and *B. arcticus* Sahlb. were burrowing. (This productive little spot yielded also at different times two *Thinobius major*, two *T. newberyi* and one *Hydrosmecta*

delicatula – the first and last in fine shingle beside the river.) The late P. Harwood, who (if memory serves) was with me on the former occasion, also found *D. angustatus* there in subsequent years; I have a specimen from him marked "Aviemore vi.44". These captures appear to have been the first in Scotland since T.E. Bishop and D. Sharp discovered it at Nethy Bridge in or about the first decade of the century, but up to now have remained, as far as I know, unpublished. A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Agdistis bennetii (Curtis) (Lep.: Pterophoridae) recorded inland

The night 30-31st July 1994 was warm and humid (minimum temperature here 65°F) and there was a light east wind. My trap contained 126 species of Lepidoptera and probably well over 1000 moths. Amongst them was *Agdistis bennetii*, a species whose larva feeds on sea-lavender and which is entirely restricted to salt-marshes. The nearest source, which could have been Tollesbury, the type locality, is about 35 miles distant on the Essex coast. – A.M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex CB11 3AF.

Specific flower associations in Empididae (Dipt.)

Platypalpus incertus Collin: not a particularly common species in general situations, and I had met with only odd specimens until I found it to be very frequent, year after year, between the petals of garden roses in this district; while no other species of *Platypalpus* occurred in that special habitat. Collin (1961, *Brit. Flies* **6** (Empididae), **1**: 206) found *P. incertus* "common in June on the flowers of *Chrysanthemum leucanthemum*" in a paddock behind his house at Newmarket, Suffolk. The floricolous habit is evidently exceptional in this genus.

Rhamphomyia variabilis (Fall.): regarded as a common species, it was tolerably so in my former garden at Blackheath (near here) but only on the flowers of the cultivated golden-rod (*Solidago canadensis*), and comparatively seldom to be seen away from them. After moving to Charlton only some two miles distant, late in 1973, I seem never to have met with it again until September 1983 on a return visit to Blackheath, when one was noted on a clump of the above plant in full flower, in a sidewalk off a road not far from my previous residence. This suggests that *R. variabilis* may be more local, if not also more restricted in its tastes, than usually considered.

Hilara longivittata Zett.: once (late May 1981) observed in large numbers flying over, though not often settling on, the umbels of *Anthriscus sylvestris* (cow parsley) where it grew abundantly along a wayside near here; both sexes appeared to be thus engaged. At other times and in other years not a single specimen was to be seen, either there or elsewhere in the district where the plant is very common. I had, however, in earlier years found a few examples on trees and shrubs near the first-mentioned spot. Collin (op. cit. 3:637) notes that females are often found "upon flower-heads of Umbelliferae", and I once took two or three on those of *Heracleum sphondylium* in

Norfolk wood. In at least the former case there was no water anywhere near; if, therefore, the association of the large genus *Hilara* with running or standing water admits exceptions, then *longivittata* would certainly seem to be one of them.– A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

Parascotia fuliginaria (Linnaeus) Waved Black (Lep.: Noctuidae) a note of its occurrence in VC8 South Wiltshire

On 18th September 1985 the Waved Black was attracted to my garden m.v. light at Dinton in Wiltshire. This is believed to be the first record for this species in Wiltshire. Subsequent sightings indicated that a resident breeding population existed in the area although occasional searches of fallen branches and tree trunks in nearby woodland (with *Daldinia* and *Coriolus* fungus on them) have failed to reveal any larva. The Waved Black is predominately a July to September species in Dinton, the earliest date of capture being 3rd July 1989 and the latest 18th September 1985. It occurs in most years and usually as a singleton on two or three dates, but on the 3rd July 1988 the m.v. trap contained five specimens. The 1994 season to date has been slightly better than usual (considering I am only able to trap at weekends) with the moth being present on 9th, 15th and 31st July and a very small specimen on 20th August with a wingspan of only 20mm (the usual size is about 28mm).– STEPHEN PALMER, The Warren, Hindon Road, Dinton, Salisbury, Wiltshire SP3 5EG.

Two species of macromoths new to the Isle of Wight

On 14th July 1994 Simon Colenutt took an example of *Rhyacia simulans* (Hufn.) at m.v. light at Chale Green and on 18th July I took a further perfect female of this species in my light trap at Freshwater. According to Goater it did appear on More's list but these are the first recent authentic records of this species for the Isle of Wight.

I should also like to report the capture of *Heliothis maritima* subsp. *warneckei* (Boursin) at m.v. light at Freshwater on 27th July 1985 which was incorrectly identified as *Heliothis viriplaca* (Hufn.) in the first instance. This species which is still to be found in the New Forest has not been taken on the Isle of Wight before.– S.A. KNILL-JONES, Roundstone, 2 School Green Road, Freshwater, Isle of Wight.

A note on the distribution of _Chazara prieuri_ Pierret 1837 in Spain (Lepidoptera: Satyridae)

Until relatively recently, Spanish populations of *Chazara prieuri* Pierret, were known only from a fairly well-defined geographical area in the mountains of Central Spain, with Albarracin (Teruel) a well-known locality. However, Tarrier (1993) recently recorded a single female of the distinctive form *uhagonis* Oberthür, in which the white upperside markings are replaced

by orange-buff, from the Sierra de La Sagra (Granada) in south- east Spain, many kilometres from it's previously known localities.

On 29th June 1994, I took a fresh female *prieuri*, also of f. *uhagonis*, on the road bordering the "La Losa" property on the north-west perimeter of La Sagra; apparently (Michael Tarrier, [F] E-Mijas *pers. comm.*) this is only the second record of *prieuri* from that area.

It is worth noting that *Chazara briseis* and *Brintesia circe*, both large black and white Satyrid butterflies with a superficial resemblance to typical *prieuri*, are abundant in the area (also for that matter in many other parts of Spain) and may well mask the presence of *prieuri;* in this context it is interesting that both specimens observed at La Sagra have been of the distinctive *uhagonis* form.

References: Higgins, L.G. & Riley, N.D., [1970] 1983. *A Field Guide to the Butterflies of Britain and Europe*. 5th (revised) edition, Collins; Tarrier, M., 1993. La Sierra de La Sagra: un écosystème-modèle du refuge méditerranéen. *Alexanor*, **18**(1): 13-42.

– W.J. Tennent, 1 Middlewood Close, Fylingthorpe, Whitby, North Yorkshire YO22 4UD.

Early butterfly dates in the Canary Isles

Between 27th and 31st March 1993 I saw the following butterflies in Tenerife that are said by Higgins & Riley, *A Field Guide to the Butterflies of Britain and Europe*, ed. 4(1980), not to occur as early as March: Large White, *P. brassicae*; Clouded Yellow, *C. croceus*; Monarch, *D. plexippus*; Indian Red Admiral, *V. indica calliroe*; and Canary Speckled Wood, *P. xiphioides*. The *Field Guide's* "May to September" for the last must be well wide of the mark, for Canary Speckled Woods were seen almost everywhere, often in great abundance. On 31st March they, together with Red Admirals and Indian Red Admirals (also "May onwards"), were feeding on a cultivated (but probably native endemic) species of *Limonium* in the Bananera at La Guancha. A thriving colony of Long-tailed Blues, *L. boeticus*, was seen on 28th March at Buenavista, dozens of them swarming around a range of procumbent herbaceous legumes in an exposed rocky area.– Clive A. Stace, Cringlee, Claybrooke Road, Ullesthorpe, Lutterworth, Leicestershire LE17 5AB.

Red Admiral overwintering sites; the continental café

Brian West's article on the overwintering habits of Red Admirals reminds me of unexpected winter sightings in the south of France (*Ent. Rec.* **106**: 121-123).

In 1985, we spent the second half of the winter on the Côte D'Azur, for tax limitation reasons. Unfortunately, that was the year when the whole coast froze solid during January, killing mimosa and palm trees indiscriminately, and freezing the oranges on the trees.

Nonetheless, on 25th January, seated at a café in Grasse, we were joined by a Red Admiral, anxious to share our beverage. The experience was repeated, on 29th January, at a café on the top of the fort at Nice, where a Red Admiral was busy drinking from the empty cups. With the snow lying around, it was encouraging to see these spectacular butterflies behaving as though it were midsummer!

At such sites, normal daily activity can presumably continue throughout the winter. But by 24th February, specimens at Menton were showing clear signs of wear and tear.– R.C. Dening, 20 Vincent Road, Selsey, West Sussex PO20 9DQ.

Notes on some Pyralids found in Bombay, India, June 1994

Shortly before the monsoons broke out in western India in early June I came across a few species of Pyralid in Aarey Milk Colony on the outskirts of Bombay city.

The most interesting find was that of six fully-fed larvae of *Orthaga exvinacea* (Hampson) on the lower branches of *Mangifera indica*, Mango. The larvae fed within loosely constructed "tents" of the leaves which would curl and dry up. It was noted that empty "tents" would become home to tiny red ants which would swarm out to attack any intruder. I was caught out on many occasions. According to Nair (1986) the moth is a pest of mangoes. At least two larvae successfully pupated in peat on my return to London which was just as well considering their foodplant requirements. An imago, (a male) emerged on 12th June just as I was leaving for another trip, a second emerged whilst I was away and was battered beyond hope in the confines of its cylinder cage. The identity of the moth was confirmed thanks to the efforts of Michael Schaffer at the Natural History Museum who also dealt with the identification of other species collected from India.

A very common species seen was *Spolanea recurvalis* (Fabricius) which would fly up from the undergrowth in and around Mango trees as well as on the fringes of the grassy areas of a park in the aforementioned area near to cultivated lilies. Its larval foodplant is said to be *Amaranthus*. Two other Pyralids collected were *Herpetogramma licarcisalis* (Walker) and *Chaphalocrocis paeyalis* (Boisduval).

Collecting in India cannot be a solo activity as one's endeavours will invariably attract the attentions of the local people. It has to be said that whatever one has collected and placed into killing jars or pill boxes must be shown to any "spectators" that gather. Not to do this would be considered the height of rudeness and being rude is not something that the Indians deserve, they are an incredibly hospitable and friendly people.

References: Heywood, V.H., 1993. *Flowering Plants of the World*; Nair, M.R.G.K., 1986. *Insects and Mites of Crops in India*; Robinson, G.S., Tuck, K.R. & Schaffer, M., 1994. *A Field Guide to the Smaller Moths of South-east Asia*.

– G. King, 20 Turnstone Close, London E13 0HN.

Tyta luctuosa (Denis & Schiffermüller), The Four Spotted (Lep.: Noctuidae), new to Co. Durham (VC66)

On 17th June 1994 I received a letter and two photographs from Dr Hazel Johnson, a lecturer in the Department of Geology in the University of Durham. The photographs had been taken in Durham City on the 12th June 1994. She had searched through Bernard Skinner's *Guide* and thought that the illustration of *Tyta luctuosa* was the only one resembling the moth at rest on the flower vegetation of the field she was walking in. In my view her identification of a species I myself had never before seen was absolutely correct.

I happened to mention this unusual capture to Adrian Riley during a telephone conversation about moth trapping business. He expressed a wish to see the photographs, which were duly mailed to him. He quickly telephoned to agree with our thoughts and suggested that although identification from photographs were often insufficiently clear to make a certain determination, in this case there was no doubt. Subsequently the Editor of this journal had no hesitation in accepting the record, after he and Bernard Skinner had also seen the pictures.

Dr Johnson took the photographs at about 10.30am on a warm sunny morning in a field near St Mary's College, University of Durham, ref. O.S. NZ 272415. This record is at present the most northerly in the British Isles, very interesting because of its Red Data status and of some rarity even where it is seen more regularly. At present I understand that the existing northerly records are of a single one for Lincolnshire and several known colonies in Nottinghamshire (Sokoloff, pers. comm.).

Thanks are due to Adrian Riley, Paul Sokoloff and Bernard Skinner for providing confirmation of the identification and most of all to Dr Johnson for having enlisted my help.– T.C. Dunn, The Poplars, Chester-le-Street, Co. Durham.

Anthribus fasciatus (Forster) (Col.: Anthribidae) in Somerset

On the wet and dull morning of 6th June 1994 my dejected stoop immediately straightened when a single specimen of this very local beetle fell onto the small dirty white umbrella which valiantly passes for a beating tray amongst my entomological paraphernalia. I had been examining the ancient oaks of Ashton Court, just outside Bristol, but the intermittent rain allowed only a brief attack on the low dripping branches and further thrashing brought down only damp individuals of the weevil *Curculio glandium* Marsham and the click beetle *Athous haemorrhoidalis* (Fabricius).

Ashton Court now finds itself in the centre of the modern administrative area of Avon, but in the Watsonian scheme of things it is just inside the extreme north-east corner of vice-county 6, North Somerset, to which the record of the *Anthribus* appears new.

The recent list of Somerset beetles (Duff, 1993), like many local catalogues, provides an excellent yard-stick against which entomologists can compare and report their findings. Although *A. fasciatus* is absent from the list, there are a few records for *A. nebulosus* (Forster), including two from Ashton Court in the first quarter of this century.

The occurrence of *A. fasciatus* near Bristol is not altogether surprising. Accorded "notable A" status in the recent Coleoptera "review" (Hyman & Parsons, 1992) and recently recorded from only a few counties, earlier records imply a range across parts of Wales and most of England, excepting the extreme south-west; the beetle is recorded from the neighbouring vice-counties of Dorset (VC9), West Gloucestershire (VC34) and Glamorgan (VC41) (Morris , 1990; Hyman & Parsons, 1992).

References: Duff, A., 1993. *Beetles of Somerset*. p.205. Taunton, Somerset Archeological and Natural History Society; Hyman P.S. & Parsons, M.S., 1992. *A review of the scarce and threatened Coleoptera of Great Britain*. Part 1. p.69. UK Nature Conservation No. 3. Peterborough, JNCC; Morris, M.G., 1990. *Orthocerous weevils. Coleoptera Curculionoidea. Handbooks for the Identification of British Insects* **5**(16): 24.

– Richard A. Jones, 13 Bellwood Road, Nunhead, London SE15 3DE.

Chloroclystis rectangulata L. (Lep.: Geometridae) The return of the green form to north-west Kent, and a comment on larval foodplants

Over fifty years have elapsed since I last came across the green form in this area, despite it being a very common species at my garden m.v. light. In the 1930s green forms were noticed frequently settled upon apple and pear trees and trellis in my former garden near Dartford Heath. For north-west Kent I can find only one reference to this form for the post-war period, this in Chalmers-Hunt (*Butterflies and Moths of Kent*, **3** 1981), a specimen seen by D. O'Keeffe at Bexley in May 1967.

On 31st May 1993 one was noted at my garden m.v. trap, and another on 17th June, but none were seen in 1994. As the local *rectangulata* have an ancestry of melanistic forms for many generations it is not surprising that neither specimen displayed the bright green colour to be found, for example, in the population in western Ireland.

That green forms were not uncommon at Dartford in the 1930s is itself noteworthy in view of the evidence that only a few miles to the west they had been supplanted by melanistic ones by the turn of the century; thus Barnett (*Proc. S. Lond. ent. nat. Hist. Soc.* 1906/7) exhibited a series from Welling all of which were melanic, and Doncaster (*Ent. Rec.* **18**:223) in 1906 quoted Fenn as saying that light forms had more or less completely disappeared from the Catford and Lee areas (in Chalmers-Hunt, *loc. lit.*).

Chalmers-Hunt mentions two larval foodplants for *C. rectangulata* in Kent – apple and cherry, and C. Plant (*Larger Moths of the London Area*, 1993) gives *Malus domestica, M. sylvestris* and *Pyrus pyraster*. Around Dartford while apple is undoubtedly the main larval foodplant, I have found

it on pear in the 1930s and 1960s on numerous occasions, while on the estate where I live the numerous ornamental *Prunus* which are a common feature of front gardens play a considerable rôle in maintaining *C. rectangulata* as a very common species. In June 1972 I counted over a dozen specimens resting on the trunk and branches of a small ornamental *Prunus*, and the adjacent fence and house walls on each of several occasions; larvae were readily found on the blossom the following year. Other similar trees have been found to support *rectangulata*, although not in such prodigious numbers. On Dartford Heath and in hedgerows in the area I have encountered the larvae on blackthorn (*Prunus spinosa*), but less commonly than those of *C. chloerata* on bushes upon which both are present.– B.K. WEST, 36 Briar Road, Dartford, Kent DA5 2HN.

Acronicta tridens (Schiff.) (Lep.: Noctuidae) in South Cumbria

I had the good fortune to capture a male *A. tridens* in my trap in Grange-over-Sands on 22nd July 1994. Over many years of collecting and trapping in this district I have examined the "tails" of many Daggers only to find that they all were the common *Acronicta psi* (L.). I have in the past taken *A. tridens* in the south of England and in my opinion now the two species, *tridens* and *psi*, are abundantly distinct without recourse to genitalia examination. So much so that the presently recorded specimen was immediately identified when first observed in the trap. Examination of the genitalia, *in situ*, quickly confirmed the identity.

The late Dr R.C. Lowther, of Grange, whose records of moths over more than 30 years are well known, never saw the adult moth while collecting at light. However, in 1936 he found two larvae of *tridens* in his garden and succeeded in rearing the moths. In this connection it may be relevant to observe that Dr Lowther was a keen gardener so that there is a possibility that the two larvae he found could have been imported on bought plants. I have quite often found larvae of *psi* in this area, but never *tridens*.
–DR NEVILLE L. BIRKETT, Beardwood, Carter Road, Grange-over-Sands.

BOOK REVIEWS

British butterfly vernacular names including Forms, Subspecies and Aberrations by **W.A. McCall.** 62pp. Word processed text in printed card cover. A5. 1994. Privately published and available from Flat 46, The Rowans, Montgomery Road, Woking, Surrey GU22 7SS. £1.25.

For each of the British butterfly species this publication lists historic names, the vernacular name in a variable number of European and North American languages and then the forms, subspecies and named aberrations. These are mixed and listed alphabetically, distinguished by the suffix "ab" or "ssp" etc. Geographical locations are given where appropriate. Authors' names are not given. There is a brief bibliography at the end.

A useful checklist, but it is a shame that Emmet's chapter on *Vernacular names and early history of British butterflies* in *Moths and butterflies of Great Britain and Ireland* 7(1) had not been consulted, as a number of interesting historic names have been omitted. PAS

Butterflies and moths of Hutchinsons and Chapel Bank by **Martin Wills** and **Antony Wren**. Volume 1. 60pp. Volume 2. 60pp. Each volume with 8 pages of colour photographs. A5. Limp. MLP Publications, 1993. Price not stated.

Hutchinsons and Chapel Banks are two London Wildlife Trust reserves near New Addington in Surrey, and are particularly good general sites for Lepidoptera. These booklets describe the sites, and deal in turn with each of the butterfly species that occur there. The information is well presented – sightings, life histories etc. and each has a line drawing of the butterfly, early stages and foodplant. Most are illustrated with a colour photograph of a living insect.

A very limited selection of moths is included, with similar treatment. Unfortunately, many of the moth species described are either uncommon on the site or rarely encountered by the general naturalist, whilst some of the more common species that are easily spotted have been omitted. It is not, nor does it make any pretence of being, a local list of moths.

A number of butterfly records are of interest including the Small Blue (several isolated colonies were known on this site by the reviewer in the 1960s, and it is pleasing to note they are still flourishing). The Marbled White was reintroduced in 1983, and continues to flourish. There is a single recorded sighting of the Brown hairstreak.

The booklets are economically produced and intended for the general observer, and have been well used by local schools for which purpose they seem well suited. PAS

Macro-moths in Cheshire 1961-1993 by **C.I. Rutherford**. 89pp. 1 Map. A5 limp. Lancashire and Cheshire Entomological Society. 1994. Price £8.00. Available from the Society at "Longridge", Macclesfield Road, Alderley Edge, Cheshire SK9 7BL.

The list complements the publication in 1983 of *Butterflies in Cheshire 1961-1982* and provides Cheshire with a comprehensive treatment of its larger Lepidoptera. After a brief introduction, there is a synoptic history of recording in the county, followed by a brief description of each of the 10km squares that make up the county of Cheshire. The systematic part of the work lists all of the 506 species recorded in Cheshire since 1960 with, for the majority of species, only the briefest of comments. A little extra detail is given for those species designated "Nationally scarce" – defined as being recorded in not more than 100 10km squares.

The detailed distribution is given in tabular form, which shows only whether or not a species has been recorded in a particular square. There are no other details such as date or recorder. Although not particularly easy to

follow, the one advantage of such a presentation is that it is economical on space, and does allow the productive squares to be easily identified.

The next section deals with the 62 species not recorded since 1960, followed by those added to the Cheshire list since 1960. These are critically and sensibly analysed according to their probable true status. A number of tables set out the "commonest" moths in Cheshire, although in fact these refer to species with the widest distribution rather than, for example, numerical supremacy. The book concludes with some notes on conservation, including comments on vulnerable species, and a number of suggestions for the future. A useful addition to the local lists available, well laid out and produced. PAS

De Kleine Vlinders – Handboek voor de Faunistiek van de Nederlandse Microlepidoptera by **J.H. Kuchlein**. 715pp. 8 colour plates; numerous maps and figures; A4 boards. Pudoc Wageningen, 1993. Price not stated. ISBN 90-220-1038-4.

This book provides a detailed account of the Dutch Microlepidoptera. Introductory chapters cover the Microlepidoptera in the context of other Lepidoptera; their morphology and characteristics including treatments of the genitalia and larvae. There is a particularly interesting section on leaf mines and cases. The book then considers in detail ecological and biogeographical aspects, particularly in respect of the development of the Dutch landscape, and the various factors that have influenced it since the last glaciation.

The next section deals with various aspects of faunistics, starting with a historical account, including thumbnail sketches of a number of famous entomological figures such as Snellen, Doets, Bentinick, Diakonoff, Vari and others. Details of the various methods of study and recording, and their limitations are then considered. Identification is tackled with an extensive illustrated key to the main groups of Lepidoptera, augmented by excellent colour photographs of representatives of each major family of the Microlepidoptera. Each species is then considered in terms of its known distribution, abundance and biology. The distribution of 1370 species is shown in map form. The concluding chapter describes current and future research work on the Microlepidoptera, and several appendices detail foodplants and other data. A very brief summary in English is given.

This is a large and comprehensive work on the Microlepidoptera by a well known author. The Dutch language used throughout is a severe trial to those with the degree of linguistic skill normally associated with English speakers. The summary pages in English serve only to frustrate as it is clear that this book is packed with interesting information on the Microlepidoptera. Whilst the keys and synoptic information can be followed with the aid of a dictionary, the narrative text that comprises most of the work is very difficult to follow. The colour photographs are generally very good, with the subjects set against a black background. Even those moths with metallic scales, such

as *Adela reamurella* and *Olethreutes arcuella* reproduce well, although the attractive green sheen on *Coleophora trifolii* comes over as speckled black. One colour plate illustrates 21 leaf mines (actually 20, as *Ectoedemia atrifrontella* mines bark) – and these are excellent, so much better that the normal line drawings of mines used for identification. As with the moths, all but one are very effectively set against a black background, the exception being the mine of *Ectoedemia argyropeza*, which illustrates a "green island".

There are two errata sheets designed to be pasted over the offending errors. However, 14 replacement figures appeared identical in every respect to those they were designed to replace! Despite the problems of language, this is a valuable resource for those with the patience to extract the information they require. Paul Sokoloff

The butterflies of Berkshire, Buckinghamshire and Oxfordshire by **Jim Asher.** 136pp fully illustrated in colour 195x252mm. Boards. Pisces Publications (for Butterfly Conservation), 1994. £18.95.

Long gone are the days when the results of local surveys could be published cheaply in a form accessible to all who were interested. Nowadays, especially when the surveys involve butterflies, it is expected that a highly professional and full colour book be produced. This book actually replaces another of the same title published in 1985 by Caroline and David Steel, and draws upon the considerable amount of recording work undertaken since the original publication.

The format follows the now traditional pattern for this type of publication, dealing briefly with the life cycle of a butterfly, a description of the counties under consideration, the work of Butterfly Conservation and the details of the "Atlas" project. There follows details of each of the species found within the area – flight times, distribution map, colour photographs and a brief narrative. Unusual vagrant species are considered, as are predators and parasites. There is a useful chapter on managing habitats to conserve butterflies and concluding text on when and where to see butterflies, a glossary, species, foodplant check lists and brief bibliography.

The three counties contain a variety of diverse habitats from heathland and downland to the Chilterns and Bernwood Forest – a notable locality for butterflies. Although rich in species, it is sad to see the continuing decline recorded of butterflies such as the Pearl and Small Pearl-bordered Fritillaries, and the conclusion that little can be done to arrest this decline to local extinction. Most people will associate Bernwood Forest with the Black Hairstreak, and the book records the varied fortunes of the butterfly – of interest is the saga of the destruction of some Black Hairstreak colonies during the extension of the M40 in the late 1980s and the subsequent establishment of a Compensation Area on the edge of Shabbingdon Wood to

be managed for butterflies. Although the book does not add materially to our knowledge of butterflies, it is attractively produced and laid out, and copiously illustrated with fine photographs taken by the author. The only aspect of the book that is not attractive is the price – high, but probably inevitable for a book produced to such a high standard. Collecting and reading books on butterflies is now a very expensive hobby.

Paul Sokoloff

EDITORIAL

During the past year, the number of contributions submitted for publication in the *Record* fell alarmingly, and as a consequence the number of published pages has been fewer than we would have liked. Thanks to the response of readers to our appeal for contributions, the situation has improved a little, and by way of compensation we offer an extra large edition this month. We have a number of very interesting papers in hand now, but please keep the contributions flowing!

Enclosed with this issue is the 1995 subscription invoice. The subscription rate remains **unchanged.** We urge you not to "overlook" the invoice, as this causes a lot of extra work for our volunteers who act as Treasurer and Registrar. We naturally hope you will renew your subscription for 1995.

The *Times* of 4th November 1994 devoted nearly 14 column inches to reporting the successful prosecution of two "butterfly collectors" under the *Wildlife and Countryside Act of 1981*. The prosecution was for possessing wild-caught specimens of the Chequered Skipper, *Carterocephalus palaemon* for sale. The item was accompanied by a large colour photograph of the butterfly (which looked remarkably like the Large Chequered Skipper, *Heteropterus morpheus* Pall. – but never mind!). The dealers were apprehended at an entomological fair in Leicester. Although the law allows for a fine of £5000 per specimen, Magistrates only imposed one of £35 per specimen.

Whatever ones views about collecting (and the Editor has no intention of starting a debate on that issue), there can be little support for those who collect wild examples of endangered species for commercial gain. We hope that this successful prosecution will act as a deterrent for other dealers.

Contents – *continued from back cover*

Immigration records for 1994

Due to circumstances beyond our control, it has not yet been possible to publish the well known series *The Immigration of Lepidoptera to the British Isles* for 1992 and 1993, although it is hoped to remedy this in due course.

We would like to ensure that the 1994 records are published as soon as possible, and to make them as comprehensive as we can it is essential that **your** records are included for all migrant species, including the common species.

We need the species, numbers if unusual, the vice-county, the locality and the date. For convenience, please give the date of sighting or, for insects taken at light, the date of the evening on which light trapping began. Any comments on unusual circumstances can also be included.

Please send all records to the Editor, at the address at the front of the *Journal*. If you have already sent your records to Bernard Skinner, there is no need to send them again.

We hope to begin the compilation at the end of January, so please make this an early winter task.

THE ENTOMOLOGIST'S RECORD
AND JOURNAL OF VARIATION
(Founded by J.W. TUTT on 15th April 1890)

Contents

Notes and observations

(Continued on inside back cover)

SPECIAL NOTICE. The Editor would be willing to consider the purchase of a limited number of back issues.

Printed in England by
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The Entomologist's Record and Journal of Variation

SPECIAL INDEX

Compiled by Lieut. Colonel W.A.C. Carter

Newly described taxa (species, genera, etc.) are distinguished by **bold type**. Taxa new to Britain or newly recognised as British are denoted by an asterix.

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